Rail Capacity Enhancement Project

Construction Environmental Management Plan

Cape Lambert to Emu Siding Rail Duplication

RCE-PLN-T-007

MASTER COPY

Rev	Description	Author	Checked	Approved	Authorised	Date
2	Updated Scope change for Resubmission with the EPS	JPH	DJJ	MLF	DJB	April 2011
1	Reissued for Use	JPH	DJJ	MLF	DJB	December 2010
0	Issued for Use	JPH	DJJ	MLF	DJB	November 2010
C	Client Review Comments Incorporated	JPH	DJJ	MLF	DJB	November 2010
B	Internal Review Comments Incorporated	JPH	DJJ	MLF		October 2010
A	Preliminary	DJJ				March 2010

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1.0 PROJECT OVERVIEW

The Rail Capacity Enhancement (RCE) project is part of Rio Tinto Iron Ore's (RTIO) plan to expand its iron ore export capacity to 330 million tonnes per annum (Mtpa).

Figure 1.1 shows a simplified layout diagram of the proposed RCE upgrades to the Rio Tinto Railway Division (RTRD) network from Emu to Cape Lambert.

Figure 1.1: General Location Plan

1.1 Background

Rio Tinto Ltd, in conjunction with its joint venture partners, own and operate a rail network within the Pilbara region of Western Australia to transport iron ore from its mine sites to its ports at Dampier and Cape Lambert. A part of this rail infrastructure includes a length of rail line between Cape Lambert and Emu Siding (located approximately 70 km south of Cape Lambert (Figure 1.1).The line was initially constructed pursuant to the *Iron Ore (Robe River) Agreement Act 1964* to construct a rail line from Cape Lambert to Pannawonica in the 1970s.

Robe River Mining Co. Pty. Ltd. (Robe) solely operated the rail line between Cape Lambert and Pannawonica until sharing of infrastructure was approved by the Minister of State Development pursuant to the relevant State Agreements. Following this agreement, the rail line is managed by Pilbara Iron Pty Ltd which oversees the daily operation of the Rio Tinto Iron Ore rail network.

Rio Tinto is currently investigating the opportunity to expand its iron ore operations in the Pilbara from a current capacity of 220 million tonnes per annum (Mtpa) to 330 Mtpa. This will involve the establishment of new and expansion of existing mines, expansion of its existing port facilities at Dampier and Cape Lambert and the upgrade of its existing rail network to accommodate this additional capacity.

1.2 Project Scope

The Cape Lambert to Emu Siding Rail Duplication Project (the Project) involves the duplication of the rail line between the port at Cape Lambert and Emu Siding. This rail duplication will take place adjacent to the existing rail line over a distance of approximately 70 km. The alignment for the northern section of the rail line between Cape Lambert and North West Coastal Highway and runs adjacent to the existing line (Figure 1.1),

A marshalling yard is required for the Cape Lambert port to manage train movements. This will be located between the 6 and 10 km points for either of the rail alignment options.

The Project will be constructed largely adjacent to the existing rail line that runs from Cape Lambert, situated approximately 38 km east of Karratha, to Emu Siding, situated within an infrastructure corridor in the northern part of Millstream-Chichester National Park (MCNP).

The Project will disturb up to 2600 ha of vegetation, which includes area for the rail line, access roads, communications and signalling network corridors, borrow pits, temporary infrastructure required for construction such as site offices and ablutions and laydown areas required for construction. Up to 1100 ha will be rehabilitated progressively during and after construction of the rail line. During operations, clearing of regrowth vegetation for maintenance and safety reasons will be required within the rail infrastructure corridor.

The duplicate line will run mostly parallel to the existing line at a distance ranging from 5 – 50 m away except in one section between Greenpool Siding and Emu Siding where separation will range from 100 – 500 m. Expansion of existing sidings and installation of new sidings will be undertaken to facilitate rail operations.

For this proposal, approximately 12 km of the rail corridor is within the boundary of MCNP in Land Administration Act leases L123390, L195323 and Mining Act Miscellaneous Licence ML47/228. However, these leases are all excised from MCNP.

The existing Emu Siding will be expanded to facilitate the use of the area as a major junction within the rail network controlling train movements in and out of the two Rio Tinto port facilities at Cape Lambert and Dampier. Rio Tinto will submit Programs of Work and Mining Proposals to the DMP for assessment and approval for any proposed ground disturbing/construction works that are to be undertaken on a Miscellaneous Licence.

The duplicate rail line will cross Western Creek and Miller Creek south of North West Coastal Highway, requiring the construction of two bridges. Construction of a number of culverts will also be required as the duplicate track will cross several smaller creeks and drainage lines.

1.3 Project Description

The project includes the following major works:

- construction of Arches Siding and modification of the existing Harding Siding on the Deepdale Railway Line;
- Extension to the existing Emu Siding on the Dampier to Tom Price Railway Line;
- construction of approximately 70 km of duplicate rail line between Cape Lambert and Emu Siding and construction of crossovers between the existing and duplicate railway lines;
- construction and operation of a marshalling yard and associated infrastructure adjacent to Cape Lambert Port;
- construction of a fuel storage facility, locomotive refuelling and trip service facilities and a locomotive wash facility at Cape Lambert;
- expansion of the existing Emu Siding on the Dampier (Hamersley) Line;
- construction of a ballast load out facility as an extension to the existing 10 kp quarry at Cape Lambert,
- construction of crossovers between the existing and duplicate rail line at Arches, Harding and Emu Sidings to facilitate movement of trains between tracks;
- installation of communications cabling, asset protection and signalling equipment;
- excavation of material from borrow pits and the 50kp quarry to construct the rail formation and access roads; and
- extraction of water from a number of existing and new bores and /or from West Pilbara Water Supply Scheme (Millstream Pipeline) to supply an estimated 2.5 GL of water over the 5 year construction period.

1.4 Site Details

Phase 1

Cape Lambert works will entail construction of track and associated signalling infrastructure on formation to be provided by another RTIOEP project. Additional tracks, a new manual wash facility and an administration building will also be constructed around the existing workshop at approximately 2kp within the CLY. The ballast loading spur will be installed on the end of the existing wye at Cape Lambert.

Arches Siding will be constructed as a standard configuration siding to the west of the existing single track rail between Cape Lambert and Harding Siding. The siding will be located between 25kp and 28.5kp.

Harding Siding will be converted into a standard siding configuration. The works required in this location for rail construction will be confined between 43.3kp and 44.3kp.

Emu Siding works consists of a dual track bypass of the current Emu Siding. A standard configuration siding will be installed on the east side of the new rail alignment. The southern end will be re-configured with a new crossover installed. Rail construction will be undertaken between 75.2kp and 78.6kp Deepdale Emu Bypass Chainages (DEB).

Phase 2

Rail will be duplicated from Cape Lambert to Emu Siding tying into Arches, Harding and Greenpool Sidings (Figure 1) Bridges will be constructed at Miller Creek (44kp) and Western Creek (74kp) as part of the Project works.

Work at CLY will involve expanding the rail marshalling yard including; laying track-work, signalling communications and services.

2.0 GLOSSARY

ARD	Acid Rock Drainage
ARS	Automatic Route Setting system
ATO	Automated Train Operation
ATR	Approvals Tracking Register
BIF	Banded Iron Formation
Calibre	Calibre Rail
CEMP	Construction Environmental Management Plan
CERR	Construction Environmental Risk Register
CLY	Cape Lambert Yard
DEB	Deepdale Emu Bypass
DEC	Department of Environment and Conservation
DES	Definitive Engineering Study
DMP	Department of Mines and Petroleum
DoH	Department of Health
DoW	Department of Water
DRF	Declared Rare Flora
ECP	Electronically Controlled Pneumatic Brakes
EMS	Environmental Management System
EP Act	*Environmental Protection Act 1986* (Western Australia)
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth)
EPCM	Engineering, Procurement and Construction Management
EPRP	Emergency Preparedness and Response Plan
GHG	Greenhouse Gases
HDPE	High Density Polyethylene
HSE	Health, Safety and Environment
IEMS	Iron Environmental Management System
JHA	Job Hazard Analysis
Landgate	Western Australian Land Information Authority

LAORS	Legal and Other Requirements System
MCNP	Millstream Chichester National Park
MSDS	Material Safety Data Sheets
NATA	National Association of Testing Authorities
OSS	Overlay Signalling System
PEC	Priority Ecological Community
PES	Preliminary Engineering Study
PPE	Personal Protective Equipment
RCE	Rail Capacity Enhancement
RTIO	Rio Tinto Iron Ore
RTIOEP	Rio Tinto Iron Ore Expansion Projects
TEC	Threatened Ecological Community
The Project	Cape Lambert to Emu Duplication
WWTP	Waste Water Treatment Plant

3.0 INTRODUCTION

3.1 Purpose and Structure of the Construction Environmental Management Plan

This Construction Environmental Management Plan (CEMP) will be used to manage the known and potential environmental impacts of the Project and associated activities.

The document has been prepared to cover elements of AS/NZ ISO14001 (2004) and the Rio Tinto Iron Environmental Management System (IEMS). As such it will be subject to internal audit by RTIO, ISO14001 accreditation audits and external audits (as required) by relevant regulatory agencies including but not limited to, the Department of Water (DoW), Department of Mines and Petroleum (DMP) and Department of Environment and Conservation (DEC).

All personnel working on the project must adhere to the CEMP to ensure any impacts on the environment are managed in accordance with proponent commitments and with legal requirements.

4.0 ENVIRONMENTAL SETTING

4.1 Physical Environment

4.1.1 Landform

The Pilbara forms part of The Great Plateau of Western Australia with the Hamersley plateau forming the most extensive elevated land area in Western Australia. Landform in the Project area is dissected so that it consists of residual uplands and ridges, standing above drainage basins.

The Pilbara has been subdivided into plateau and valley elements to provide a framework in which to describe vegetation patterns. The area between the Fortescue and Ashburton rivers is often referred to as the Hamersley Range. The northern scarp is heavily indented by geologically recent erosion, producing major gorges. Streams that drain from the range flow to the south causing the southern scarp to be less eroded and for many kilometres it forms a long unbroken “wall” more than 300m high.

4.1.2 Climate

Across the Project area, climate can be characterised as arid tropical with two distinct seasons, summer and winter. Temperatures range from maximums of up to 47°C (39°C January mean daily maxima) in summer whilst winter temperatures are cooler (24°C July mean daily maxima).

Rainfall is highly variable due to the influence of periodic summer cyclones but is mostly between 300 mm and 400 mm per annum. Peak rainfall occurs in the summer months (December – February), with smaller peaks occurring during May and June as the result of cold fronts moving across the south of the state which occasionally extend into the Pilbara. Flora and fauna surveys are restricted to peak rainfall periods.

4.1.3 Local Geology

Local geology over the Project area has been derived from the hydrogeological pre-feasibility study (Aquaterra, 2008).

The geology is dominantly Archaean basement variably overlain by Quaternary-Recent sediments along drainage channels and topographic lows; drainage channels typically coincide with regional scale faults. Archaean basement rocks are predominantly mafic and ultramafic volcanics with minor clastic sediments and granitic intrusions. The Cleaverville Formation, exposed north and west of Roebourne, comprises bonded iron formation, chert, shale and minor volcaniclastic rocks. Units are typically metamorphosed and/or retrogressed to low grade assemblages although many mafic extrusive rocks preserve primary magmatic structure.

There are potential acid sulphate soils in the coastal area and in areas close to the estuarine, river and wetland systems.

4.1.4 Hydrogeology

The duplicate rail line will cross Miller Creek (46 km from Cape Lambert), Western Creek (76 km from Cape Lambert), and several smaller creeks and drainage lines.

Rivers in the Pilbara region are ephemeral and flow only occasionally. Sheet flow areas characteristically occur where there is poorly defined drainage and low gradients, or in flat or gently undulating areas where ponding occurs. Local hydrology over the Project area has been derived from the Aquaterra Pty Ltd Pre-Feasibility study (2008).

The Project will traverse the Harding River Dam Catchment Area. The Harding River is formed by the junction of three main tributaries: Western Creek, Harding River and Harding River East. This catchment covers an area of approximately 1,100 km^2 and runoff is high due to intense rainfall events and the relatively impervious nature of the catchment. Within the Harding River Dam catchment area there is a Priority 1 Public Drinking Water Source Area (PDWSA).

Towards Emu Siding, the Project will also be in close proximity to the Millstream Water Catchment Area. This catchment covers an area of approximately 13,300 km^2 and the underlying aquifer is readily recharged during flood events. Within the Millstream Water Area there is a Priority 2 PDWSA.

The groundwater occurrences between Cape Lambert and Emu siding are limited to shallow unconfined alluvial or fractured rock aquifers and are generally hydraulically connected. There is also significant surface water to groundwater interaction. Groundwater flow in the alluvial aquifers is generally in the same direction as stream flow. Drainage channels provide recharge to the underlying fractured rock aquifers during periods of river flow, in between rainfall events the subsurface flow and groundwater levels will likely follow a recession pattern. The groundwater quality in fractured rock and alluvial aquifers ranges from fresh to brackish. Coastal aquifers coinciding with tidal flats near Cape Lambert may be subject to saline intrusion.

Along all creeks and rivers in the Pilbara, where riverine vegetation has established, it is likely that this vegetation is supported by groundwater in the river alluvium.

4.2 Biological Environment

4.2.1 Flora and Vegetation

The region between Cape Lambert to Emu is dominated by Hummock and Tussock grasslands with isolated areas of open Eucalyptus woodlands and broader regions of low open Acacia shrublands in the north, moving into tall open acacia shrub land communities in the south (Biota, 2008a). The quality of vegetation varies across the Project area, through varying degrees of grazing and construction related impact and previously cleared areas that have been rehabilitated (Biota, 2008a).

Overall the vegetation is considered to be in good condition except for areas in the northern portion of the Millstream- Chichester National Park that are close to existing infrastructure. These areas have been previously disturbed by construction activities and have been invaded by weeds.

Three vegetation communities are considered to be of high conservation significance:

(1) Priority 1: '*Cracking clay communities of the Chichester Range and Mungaroona Range'* comprising of mixed grassland and 'Roebourne Plains coastal grasslands'. This Priority Ecological Community (PEC) occurs approximately in the 53.5 to 59.7km chainages and 63.6 and 64.6km chainages along the existing rail line;

(2) Priority 3: 'Riparian vegetation of the Harding River and its tributaries' comprising dense riparian forest of River Red Gum (*Eucalyptus camaldulensis*), with patches of Cadjeput (*Melaleuca argentea*) in places. There is considerable invasion by weeds (mainly *Cenchrus* grasses) but the PEC is still considered to have High conservation value; and

(3) Priority 3: Horseflat land system of the Roeburn Plains that contains *Eragrostis xerophila* tussock grasslands on clay and encompasses the remainder of the Horseflat land system – not including the Roebourne Plains gilgai grasslands and the Chenopod association of the Roebourne Plains area. Extent- from Cape Preston to Balla Balla (Whim Creek).

One priority flora species was identified:

(1) Priority 1: *Nicotiana heterantha*. Annual herb species occurring on heavy clays on seasonally wet flats. A single specimen has been collected from the southern edge of the Harding Dam flood-out area. However, this identification is to be confirmed.

No Declared Rare Flora (DRF) was recorded from the Project area and none are expected to occur.

Seventeen species of weeds occur within the Project area, with no Declared Plant (declared weeds), however, a number of species are considered to be serious environmental weeds, particularly Ruby Dock (*Acetosa vesicaria*) and Kapok Bush (*Aerva javanica*) identified between Cape Lambert and Rosella siding and two *Cenchrus* species (Buffel and Birdwood grass), which have been identified at locations throughout the Project area.

Fauna

Four Schedule 1 fauna species are listed by the DEC as likely to occur in the Project area. Under the *Wildlife Conservation Act 1950*, Schedule 1 fauna species are those which are rare or likely to become extinct. Species listed under Schedule 1 are also referred to as Threatened Species for fauna or DRF for flora. Despite the DEC listing, no Schedule 1 fauna or other protected fauna as listed under the federal *Environment Protection and Biodiversity Conservation Act 1999* (*EPBC Act*), were recorded within the Project area.

The relatively linear nature of the Project consolidated with an existing corridor and with appropriate management measures would indicate that there is a low risk of significant impact upon these Schedule 1 species in event that they do occur.

4.3 Social Environment

4.3.1 Local Government and Towns

The RCE Project runs from Cape Lambert to Emu Siding, through the Shires of Roebourne and Ashburton. Major towns in proximity to the Project include:

Table 4-1 Town Proximity to Works

Town	Proximity to Works
Wickham	1km
Roebourne	4km

4.3.2 Aboriginal Heritage

The Project area lies within two Native Title claims inclusive of the Ngarluma Group, Yindjibarndi.

The main Aboriginal communities are located at:

- Karratha - Aboriginal population of about 300 people of mixed language groups; and
- Roebourne - approximately 900 Aboriginal people of mixed language groups inclusive of the Cheeditha community.

A number of Aboriginal heritage archaeological sites have been identified within the Project area. All efforts will be made to avoid disturbance to these sites (refer to section 5.6). Those sites requiring disturbance will be managed in compliance with the *Aboriginal Heritage Act* 1972, including liaison with affected Aboriginal Groups.

4.3.3 Adjacent Land Use and Tenure

The Project area traverses a broad cross-section of land ownership and tenure including various tenements under the Western Australia *Mining Act 1978*, Leases under the *Land Administration Act 1997* and freehold land as administered by the Western Australian Land Information Authority (Landgate).

The project area falls within the Mt Welcome Station pastoral station, that is between Wickham and Harding Dam.

The Project area is inside or passes within close proximity to environmentally sensitive areas such as; Millstream-Chichester National Park, Harding Dam and Millstream Water reserve Catchment.

5.0 ENVIRONMENTAL MANAGEMENT SYSTEM

5.1 Iron Environmental Management System Overview

Impacts on the environment will be managed via the Iron Environmental Management System (IEMS). The primary purpose of the IEMS is to demonstrate sound environmental performance through control of impacts on the environment, consistent with the business Environmental Policy and Objectives. The IEMS was re-certified to AS/NZS ISO14001 (2004) in October 2006. Whilst all contractors are encouraged to establish and maintain their own Environmental Management System (EMS), compliance with the IEMS is required as a minimum.

Calibre has developed this CEMP for specific environmental risks based on IEMS procedures. Calibre will ensure that the relevant IEMS documentation will be available to Project personnel, including contractors.

5.2 Environmental Policy

The RTIO Health Safety, Environment and Quality Policy (RTIO-HSE-0070927) provides a framework for RTIO activities. The policy applies to all personnel and contractors undertaking work on behalf of RTIO. The content of these policies will be presented during site inductions and displayed in site common rooms and the HSE office. Contractors are also encouraged to have their own environmental policy.

5.3 Environmental Risk Register

A Construction Environmental Risk Assessment workshop will be conducted and a Construction Environmental Risk Register (CERR), document number RCE-PLN-T-003, will be produced for the Project. The purpose of the workshop and register will be to identify the environmental aspects applicable to the Project and assess the significance of their impacts. This CEMP will be reviewed and updated as a result of the risks and management practices identified in the CERR.

The CERR will be reviewed at least annually and will also be reviewed in response to incidents, changes in legal requirements, changes in Project scope, and findings of inspections and audits and management reviews. The CERR will be managed as a controlled document and each revision will require the approval of RTIO. Risk registers are approved by the RTIO Project Manager in consultation with the RTIO Environmental Manager. RTIO recognises that regular updates of risk registers are an indicator of a healthy environmental management system.

At a task level, Job Hazard Analyses or equivalent will be used by personnel to identify potential environmental risk and appropriate control measures.

5.4 Legal and Other Requirements

5.4.1 Legal Requirements

The Project will comply with all relevant Federal, State and Local Government legal requirements. Copies of all Licences/Approvals/Permits will be held on the Legal and Others Legal System (LAORS).

5.4.2 Legal and Other Requirements Register

The RCE Technical Report for Legal and Other Requirements Register (RCE-REP-T-002) identifies legislation, policies, systems and standards relevant to the Project. The register will be reviewed on a quarterly basis with new legislation and standards added as required. Approvals are monitored through the Rail Environmental Approvals Register (EAR) on the IEMS website. Copies of all approvals will be referenced in the EAR as they are received and each approval will be a controlled document.

A Project specific online Legal and Other Requirements Register (LAORS) has been created and will be updated as required. It consolidates all the legal and other requirements relevant to the Project. Copies of all approvals will be referenced in the register as they are received and each approval will be a controlled document and held on the IEMS intranet system with a hard copy held in the site HSE office. On site the Legal and Other Requirements Register will be made available in conjunction with the EAR. Calibre will ensure that communication of legal responsibilities between accountable persons is duly undertaken.

5.5 Demonstrating Legal Compliance

The Project will be subject to annual internal audits for compliance against LAORS. The Site Environmental Advisor will undertake inspections and audits against legal compliance and communicate the results of these inspections/audits to relevant persons. Results of audits will be included in reports to RTIO.

Internal and external audit programs will include, but not limited to:

- The IEMS Environmental Assessment Program (RTIO-HSE-0015765);
- Regulatory inspections/audits of the site (e.g. DEC, DoW, DMP);
- ISO14001 surveillance process (also see section 4.17 Internal Audits);
- Rio Tinto HS&E Standards; and
- Internal Calibre audits.

5.6 Environmental Objectives and Targets

Project specific Objectives and (RCE-PLN-T-004) will be developed for the construction phase that will be consistent with RTIOEP Objectives and Targets and which will be reflective of CERR issues. Appropriate actions will be selected to support these. These will be reviewed on an annual basis and will be a controlled Calibre document. Performance will be measured by individually reporting on Targets set, via Compliance Monitoring, Monitoring Reports and Incident Report Tracking.

5.7 Project Responsibilities and Authorities

All personnel managing, preparing documentation or working on construction of the Project shall have specific responsibilities for environmental management Table 5-1 Summary of Key Roles and Responsibilities details the roles and responsibilities of key personnel in relation to environmental management of the Project.

Each of the roles listed is filled by an individual that has been screened and deemed competent by RTIO. In particular, environmental personnel have been selected on past demonstrated competence in environmental management.

Table 5-1 Summary of Key Roles and Responsibilities

ROLE	KEY RESPONSIBILITIES
RTIO	
RTIOEP Environmental Manager (Off-site)	• Providing specialist environmental management support to RTIOEP; • Providing management advice on implementation of the IEMS; • Ensuring effective application of IEMS for RTIOEP; • Authorising and communicating with external agencies as required; • Approving the Risk Register and the CEMP in coordination with the RTIOEP Site Representative; • Managing environmental audits of the project to ensure compliance with legal requirements and the IEMS; • Providing environmental advice in the event of an incident or emergency event.
RTIOEP Specialist Environmental Advisor (Off-site)	• Assisting RTIOEP Environmental Manager with tasks as above.
RTIOEP Project Manager (Off-site)	• Demonstrating effective leadership to all project personnel with respect to matters concerning the environment; • Ensuring the project complies with all applicable requirements set out in the Rio Tinto Environment Standards and IEMS. • Ensure legal compliance.
RTIOEP Site Representative (On-site)	• Demonstrating effective leadership to all project personnel with respect to matters concerning the environment and implementation of the IEMS at a project level; • Reporting significant incidents and emergency events to the RTIOEP Environmental Manager or RTIOEP Environmental Advisor as soon as reasonably practicable.
Calibre	
Calibre Project Managers (Off-site)	• Coordination of project deliverables with RTIOEP Project Manager; • Ensuring effective delivery and implementation of IEMS within project scope of works; • Ensuring effective communication of project requirements to Calibre personnel and contractors.
Calibre Site Construction Manager (On-site)	• Ultimate responsibility in relation to compliance with the requirements of the contract including the environmental specifications; • Facilitating review and approval of the Calibre CERR and CEMP in consultation with the RTIOEP Environmental Manager; • Reviewing environmental management performance on a monthly basis and supplying copies of reports to the RTIOEP Environmental Manager; • Ensuring appropriate management actions are put into place to facilitate compliance with all legal requirements; • Ensuring a hard copy of relevant licences/works approvals/permits is available for immediate reference; • Ensuring the requirements of the Construction Environmental Management System, including the CEMP, are met.
Calibre Environmental and Approvals Manager	• Overall responsibility for Calibre EMS; • Coordination of project approvals in conjunction with the Rio Tinto Approvals Team; • Liaison with RTIOEP Environment Manager and other project personnel as required; • Providing environmental support to the Calibre Project Manager and the Calibre Environmental Advisors.

ROLE	KEY RESPONSIBILITIES
Calibre Senior Environmental Advisor (Off-site)	• Providing Calibre Management advice in implementation of the IEMS; • Development, management and review of IEMS component of works; • Ensuring effective application of IEMS for RTIOEP; • Conducting internal audits of site IEMS and legal compliance; • Liaison with RTIO Environmental Manager and other project personnel as required; • Providing environmental support to the Calibre Construction Manager in the absence of the on-site Calibre Environmental Advisor.
Calibre Environmental Advisor (On-Site)	• Assisting Calibre Environmental manager with development of CEMP and IEMS requirements; • Implementation of the CEMP as necessary; • Specialist on-site environmental advice and guidance to contractors as necessary; • Monitoring of environmental parameters and submission of monthly environmental reports; • Delivery of site environmental inductions; • On-site liaison with RTIO Specialist Environmental Advisor and/or RTIO Environmental Manager as required.
Calibre Construction Superintendent	• Ensuring the requirements of the Construction Environmental Management System including the CEMP are met for their area of responsibility; • Ensure that employees and sub contractors under their direction have appropriate training and understand the environmental restrictions associated with their work activities.
Calibre Occupational Health and Safety Manager	•Implement components of the CEMP that relate to Health and Safety as required; •Provide inspection and monitoring information to Calibre Site Environmental Advisor as appropriate; • Provide advice and assistance in the coordination of Health, Safety and Environmental aspects of the project.
CONTRACTORS	
Successful Tender Applicants for the provision of construction materials and services	• Appoint environmental representative; • Demonstrate an understanding of this CEMP and an awareness of relevant environmental legislation during the tender process; • Indicate a commitment to provide services and materials that minimise impact to the environment; • Supervise and train their personnel in order to meet the requirements of this CEMP; • Implement the requirements of this CEMP that relate to their work scope; • Seek the assistance of the Calibre Environmental Advisor in reducing environmental impacts of their activities; • Report any incidents as soon as practicable to the Calibre Environmental Advisor (On-Site) or other authorised personnel as appropriate; • Undertake corrective/preventive action as a result of findings of incidents, audits, inspections and management reviews and will seek to close out corrective/preventive actions immediately.

5.8 Environmental Awareness and Training

5.8.1 Inductions

All Project employees and contractors are required to undertake an EP HSE Induction before they commence work on any RTIO site.

Calibre will develop a Project specific induction training which will communicate the environmental impacts introduced by Project activities and specify the control measures to be implemented by all personnel. The induction will also cover specific management actions for working in environmentally sensitive areas such as MCNP. This induction will be reviewed on a quarterly basis, or as significant Project changes arise.

5.8.2 Training Needs Analysis and Matrix

Calibre will conduct a training needs analysis for all personnel, taking into account the employees/contractor's position, responsibility and duties as presented in RCE-PLN-T-005. A Training Matrix and Training Records will be maintained, and kept for a minimum of seven years and will be a controlled Calibre document.

Environmental awareness training will be held at regular intervals. Contractors are required to ensure that environmental training, on topics relevant to their scope of work, is provided to its employees and sub-contractors throughout the construction period. There will be environmental toolbox meetings, held on a monthly basis during construction, to discuss site-specific environmental issues and management.

5.8.3 Training Materials

Existing training materials are available from RTIO which will be used where appropriate. When required, Calibre will update these materials or develop Project specific training and supply copies of this training material to the RTIOEP Environmental Manager.

5.9 Communication

5.9.1 Internal

Environmental notice boards will be established on-site to inform personnel of relevant environmental information such as the RTIO HSEQ Policy, minutes of meetings, results of monitoring, performance standards, environmental incident alerts and company environmental notices. The notice board will be refreshed periodically with up-to-date information as it becomes available.

Communication of environmental issues that will require actioning will be done through:

- Progress Meetings;
- Audit Report Findings;
- Environmental Site Inspections;
- Incident Reports;
- Corrective Action Register; and
- Meetings between RTIO EP Specialist Environmental Advisor (Off-site), Calibre Project Managers (Off-site) and Calibre Senior Environmental Advisor (Off-site).

Communications with rail operations and other existing operations will be conducted via the interface meetings that occur between construction and operations. These meetings will be minuted and distributed to relevant staff.

The result of these communications will be recorded in meeting minutes or will be contained within reports.

5.9.2 External

The RTIOEP Environmental Manager is the only person authorised to communicate externally in relation to matters concerning the environment. This includes but is not limited to communications with the media and government agencies and particularly in relation to reporting of incidents that may have occurred.

A communication protocol will be developed to inform the DEC of construction activities, and the management of weeds and fire within the MCNP.

All community complaints received by Project personnel will be directed to the RTIOEP Site Representative immediately for action. Complaint information will be recorded using the RTIO incident report forms.

5.10 Document Control

The following documents will be managed as controlled documents and revisions will be re-submitted to RTIOEP for approval:

- Construction Environmental Management Plan (this document);
- Construction Environmental Risk Register;
- Objectives and Targets;
- Training Needs Analyses; and
- Audit Schedule.

LAORS is maintained in electronic format on the RTIO Intranet.

These documents are intended to be of a live nature for reference by project personnel and will be regularly updated by designated personnel.

5.11 Management Procedures

Section 6 of this CEMP details the management principles and objectives for particular tasks or environmental risk. These incorporate the Rio Tinto Construction Environmental Management Guidance Notes and Specification (RTIO-HSE-0015533) and specific items listed in the CERR.

5.12 EMS Documentation

IEMS documentation is available to Calibre personnel via the IEMS intranet site and from RTIO. Calibre will forward relevant IEMS documentation to Calibre staff and contractors as necessary.

Calibre will also use controlled documentation available to it via the Calibre Projects EMS certified to AS/NZS ISO 14001:2004.

5.13 Emergency Response

An Emergency Preparedness and Response Plan (EPRP) will be developed prior to construction activities. The EPRP will detail:

- actions and procedures required to mitigate environmental harm associated with incidents and emergencies;
- procedure on communications;
- responsibility for notifying the RTIOEP Site Representative of the incident or emergency;
- Memorandum of Understanding with existing operations in relation to response from site;
- contact details of all personnel who are required to be notified;
- other site emergency contact numbers and details, including external site emergency services and service providers;
- schedule for emergency response drills; and
- training requirements.

Calibre and the projects Contractors will maintain equipment and personnel for response to potential environmental incidents and identify likely emergency scenarios. Equipment and personnel requirements will also be outlined in the Site Emergency Response Plan.

5.13.1 Emergency Drills

At least one emergency response drill will be conducted annually, which addresses potential environmental emergency issues. This will be managed under the Calibre Site Emergency Response Plan.

5.14 Monitoring and Measurement

The environmental performance of construction activities and the identification of environmental monitoring requirements will be assessed throughout the construction period. Regular monitoring of all activities, contractors and personnel will be conducted, including daily, weekly and monthly checklists, calibration record checks, mobilisation and demobilisation audits and audits for compliance with IEMS. Monitoring procedures to be developed will include (but are not limited to):

- Sampling Methods;
- Sampling Locations;
- Quality Assurance and Quality Control;
- Responsibilities;
- Storage;
- Disposal;
- Dispatch; and
- Calibration.

Calibre Site Environmental Advisors will be responsible for coordinating the monitoring of construction activities and compilation of data for reports. Monitoring of environmental performance is not limited to environmental personnel. Project supervisors are responsible for all works and personnel under their supervision to ensure that work activities adhere to the requirements of this CEMP.

Any monitoring required to meet legislative; licensing, work approval or monthly environmental reporting requirements will be undertaken in accordance with IEMS procedure Environmental Monitoring and Measurement (RTIO-HSE-0016668).

Monthly Environmental Reporting will include, but not be limited to:

- ground disturbance and clearing locations and area cleared;
- amounts of topsoil and subsoil stockpiled;
- borrow pit activities (area disturbed and volumes);
- water usage data;
- waste type, amount (mass/volume), and disposal method (recycled, re-used, disposal location);
- hazardous materials data; and
- greenhouse gas (energy consumption) /NGER data.

5.15 Incidents and Corrective Actions

5.15.1 Incident reporting

Incidents include, but are not limited to, events that cause environmental impacts or harm, near misses and complaints. All environmental hazards and incidents must be reported promptly to ensure identification of corrective actions, appropriate cleanup and to reduce the likelihood of reoccurrence. Environmental incidents that are considered significant may legally need to be reported to Government by RTIO.

An incident report should also be completed where there has been a non-compliance with internal procedures that may or may not have resulted in an environmental impact or harm. Notification to RTIO is required for those incidents within 24 hours, with a written report to be submitted within 7 days. Environmental hazard reporting aids in the identification of environmental risks and the implementation of preventative management procedures and controls.

Significant incidents require reporting to RTIO immediately. This will involve the completion and submission of the RTIO Incident Report Form (RTIO-HSE- 0037074) using the incident classification guide (RTIO-HSE-0013610) within 24 hours of the incident. The Calibre Environmental Manager must be notified immediately upon occurrence of significant environmental incidents.

All Project personnel (RTIO, Calibre, contractors and subcontractors) have the responsibility to report incidents either directly or indirectly through their supervisors.

Investigation of environmental incidents is conducted to determine contributing factors to the event and to accurately identify and initiate appropriate preventative and management actions. An incident register will be kept by Calibre and used to analyse incident trends and actions.

Table 5-2 Incident Categories provides a guide for the classification of significant and non-significant environmental incidents.

Table 5-2 Incident Categories

INCIDENT CATEGORY	DEFINITION
Non Significant	An incident that has been defined as either having an Actual Consequence classified as Minor or Medium; or a Maximum Reasonable outcome classified as Low or Moderate Examples include: Environment: near source, confined, promptly reversible impact, through to near source, confined and short term reversible impact Reputation: damage to reputation of work area within an operation, through to several work areas and one-off negative exposure in local media Compliance: non conformance with internal operations procedure, through to non compliance with external or operational procedure with low potential for impact Heritage: community complaint resolved via existing procedures, through to low level community dissatisfaction Community: isolated incident, through to low level community dissatisfaction
Significant	An incident that has been defined as either having an Actual Consequence classified as Catastrophic, Major or Serious; or a Maximum Reasonable outcome classified as Critical or High. Examples include: Environment: near source, confined medium-term recovery impact, through to widespread, unconfined impact requiring long-term recovery and with major residual damage Reputation: damage to Business Unit reputation, through to damage to Rio Tinto Group and international exposure Compliance: one-off non compliance, through to suspension of operation by regulators Heritage: repairable through to irreparable damage to a site or item of cultural significance Community: repeated community complaints requiring site management response, through to severe, prolonged community resistance (greater than 3 years) or international exposure

5.15.2 Corrective Action

Corrective actions generated from incident and hazard reporting will be recorded on the Calibre Action Register to ensure items raised are recorded, rectified and closed. Where necessary, the project will retain evidence (documents, photographs, personnel statements) on file to demonstrate completion of actions. The Action Register, recording all corrective actions raised and closeout details will be maintained on site.

5.16 Managing Records

All documentation (such as training records, incident reports etc.) will be managed through the Calibre document control procedure (CP-PRO-PM-001) and IEMS to ensure a thorough archiving system (EP-PMP-03) and handover of environmental management records to Rio Tinto. Records will be retained for a minimum of 7 years.

5.17 Internal Audits and Inspections

Monitoring and internal audits are required so that RTIOEP management are advised of environmental performance and environmental non-conformances. In addition, construction project audits form part of RTIOEP's self-assessment program (required under Rio Tinto's corporate assurance program) and covered under IEMS.

Inspections and audits will be conducted when applicable to ensure compliance with this CEMP, IEMS, RTIOEP Standards, Ministerial conditions and (DEC/DoW/DMP) licensing requirements. Types and frequencies of audits and inspections are outlined in Table 5-3 Project Inspections and Audits. An Audit Schedule will be produced by Calibre and remain a controlled document. Actions and management requirements resulting from audits and inspections remain the ultimate responsibility of the Calibre and RTIO Project Director, with site-specific management being administered by the Calibre Site Construction Manager.

Table 5-3 Project Inspections and Audits

TYPE OF INSPECTIONS	PURPOSE	PROCEDURE
Daily Site Inspection by Contractor	Informal site inspection to be conducted by all project supervisory staff. Day to day work activities are evaluated for compliance with the CEMP. Provides informal setting for contractor engagement with CEMP.	Informal, supervisor may complete Form 106 - Daily HSE Checklist.
Calibre Environmental Site Inspection by Contractor	Formal site inspections conducted by Calibre in conjunction with contractor supervisory staff. Evaluate contractor understanding and maintenance of CEMP procedures and controls. It also provides an opportunity for Calibre and Contractors to discuss effectiveness of environmental procedures and controls at a particular job site so that if necessary adjustments can be made to ensure continued compliance with CEMP objectives and targets.	Formal, Calibre Form 163 Environmental Inspection Checklist to be completed and submitted to Calibre site Environmental Advisor. Calibre Site Environmental Advisor to log Corrective Actions into the Corrective Action Register. Form 163 will be kept on file by the Calibre Site Environmental Advisor.
CALIBRE CONDUCTED AUDITS		
Mobilisation Audit	To assess Calibre and Contractor compliance with CEMP. To ensure that design criteria have been met and that environmental procedures are being implemented.	Formal, a report of the audit findings (Form 162) will be complied by the site Calibre Environmental Advisor and submitted to the Contractor Project Manager, Calibre Construction Manager.
Demobilisation Audit	To assess Calibre and Contractor compliance with CEMP and to ensure that all project handover documents have been completed.	Formal, a report of the audit findings will be compiled by the Site Environmental Advisor and submitted to the Contactor Project Manager.

TYPE OF INSPECTIONS	PURPOSE	PROCEDURE
Internal Legal Compliance Audit	To review compliance with legal requirements	Formal, Calibre Environmental Advisor conducts an audit against legal requirements (Form 162).
Internal CEMP Audit	To review compliance with the CEMP and assess its' effectiveness.	Formal, Calibre Environmental Advisor assesses performance of the EPCM against the CEMP (Form 162).
Internal CEMP Audit – Contractors	To review Contractor compliance with the CEMP.	Formal, Calibre Environmental Advisor assesses performance of a major contractor against the CEMP (Form 162).
Internal Environmental Management System Audit	A formal review of the EMS conducted annually during construction.	Formal, a report of the audit findings (Form 162) will be compiled by the Calibre Environmental Advisor and submitted to the Calibre Construction Manager, Calibre, Calibre Environmental Advisor, RTIOEP Specialist Environmental Advisor and RTIOEP Project Manager.
Compliance LAORS	To ensure that LAORS has been maintained and is up to date and that all Compliance Reports for Works Approval have been submitted to the DEC as required. Biannually during construction.	Formal, a report of the audit findings (Form 162) will be complied by Calibre.
THIRD PARTY CONDUCTED AUDITS		
RTIOEP Audits	IEMS compliance performance, compliance against RTIO Standards, general performance audits, legal compliance audits.	RTIO procedure that will be adhered to as required.
3rd Party Surveillance Audits (DEC, DMP, EPA)	Assess compliance with licenses, works approval and permits.	External procedure that will be adhered to as required.
Calibre EMS Audits	Assess compliance with Calibre's EMS.	Formal, a report of the audit findings will be compiled by the auditing body. Actions will be reported internally to Calibre

5.18 Management Review

Review and revision of this CEMP will be undertaken on an annual basis (or at least once if project life less than one year) following assessment of statutory approvals and conditions, results of monitoring, inspections, recurring incidents, auditing and improved industry practices. In order to provide effective feedback, this CEMP ensures that:

- regular inspections of key areas highlighted in the CEMP are undertaken;
- actions identified in the CEMP are implemented and reported; and
- environmental incidents are reported and rectified.

Any revision of the CEMP will be forwarded to RTIOEP for approval prior to adoption. Any corrective actions arising from such review will be entered into an actions register to ensure appropriate closeout.

The RCE project will be reviewed against this CEMP approximately 12 weeks after construction commencement as per Construction Environmental Management Guidance Note and Specification RTIO-HSE-0015533.

6.0 MANAGEMENT PROCEDURES

The management actions that follow in this section form the basis for control of construction activities. Where reference is made to procedures or guidelines the latest approved version (as located on the IEMS website) is to be used.

The person named under the “responsibility” column within each management action refers to the person whose ultimate responsibility is the implementation of that action. Responsibility of particular management procedures and actions can be delegated, though overall responsibility will remain with the responsible person.

Where the Calibre Construction Manager is named and the work is being conducted by a Sub Contractor, the Sub Contractor is responsible for ensuring the effective implementation of the management action. The Calibre Construction Manager has ultimate responsibility as the manager of the Sub Contractor and the sub contract.

6.1 Use of Existing Infrastructure and Facilities

The construction of new facilities and infrastructure in previously unused areas may cause unnecessary impacts to the natural environment. The environmental footprint of infrastructure and facilities can be reduced by making use of those facilities already in place. Examples include the use of existing landfills rather than construction of new landfills. Any liaison work with Operations must occur with the RTIOEP site rep or Project Managers sanctioning.

Objectives:

- To effectively communicate with operations management on the use and maintenance of existing facilities in accordance with agreed management requirements; and
- Management actions for ensuring the use of existing infrastructure wherever possible, is detailed in Table 6-1 Management Actions for Use of Existing Infrastructure and Facilities.

Table 6-1 Management Actions for Use of Existing Infrastructure and Facilities

NO.	ACTION	RESPONSIBILITY	TIMING	REFERENCE DOCUMENTS
6.1.1	Calibre shall liaise with a suitable Operations Representative to determine the existing facilities and infrastructure available for use prior to mobilisation.	Calibre Site Construction Manager	Pre-construction/ Construction	
6.1.2	Calibre shall provide relevant details to the Operations Representative regarding usage and consumption demands. For example, this would include estimated landfill waste volumes, potable water bore extraction rates, waste water treatment inflow volumes, etc.	Calibre Site Construction Manager	Construction	
6.1.3	Calibre may at its discretion conduct a due diligence audit to confirm the current condition of the facilities and infrastructure prior to use. The current condition must be agreed by the Operations Representative.	Calibre Site Construction Manager	Construction	
6.1.4	Calibre shall comply with the current operating procedures of the existing facilities/infrastructure.	Calibre Site Construction Manager	Construction	
6.1.5	Calibre shall establish communication systems such that it can appropriately respond to operational changes including but not limited to procedural changes associated with existing facilities. This must address communication requirements associated with emergency response.	Calibre Site Construction Manager	Construction	
6.1.6	Calibre shall meet the reasonable requests of the Operations Representative in relation to compliance with catchment-related management issues. For example, this may include weed management (spraying) programmes, feral animal management, and firebreak management. Calibre may also be subject to audits conducted by the relevant Operation in relation to these catchment-related management issues.	Calibre Site Construction Manager	Construction	
6.1.7	Calibre shall be subject to inspections and audits performed by the Operations Representative to facilitate overall environmental management of the existing infrastructure/facilities. Calibre shall respond with details of corrective actions taken to resolve any issues identified by the Operations Representative.	Calibre Site Construction Manager	Construction	
6.1.8	Calibre shall notify the Operations Representative of any defects or maintenance required on existing infrastructure and facilities that if not fixed, may impact the environment.	Calibre Site Construction Manager	Construction	

6.2 Ground Disturbance and Clearing

Ground disturbance can lead to a loss of flora, fauna habitats and disturb heritage sites. Ground disturbance includes any activities that disturb, alter or damage the Project area in any way. This is not limited to previously undisturbed ground and procedures must be followed so as to reduce rehabilitation costs, soil rehandling, ensure compliance with appropriate legislation and limit damage to the natural environment and heritage values.

Clearing and ground disturbance breaches have significant penalties and compliance with the projects clearing procedure is mandatory.

Breaches may impact on the adjacent Millstream Chichester National Park (MCNP), an area of high conservation significance. Additional controls to manage this risk is described in section 6.22 – A Class Reserve Management.

Ground disturbance activities include:

- disturbance or removal of vegetation;
- change in ground compaction from vehicle and plant movements and parking;
- drilling, grading, trenching and excavation activities;
- borrow pits and quarries;
- changes to natural drainage;
- establishment of office and laydown areas;
- topsoil stockpiling; and
- importation of fill material.

Objectives:

- To ensure sustainable stewardship of the land by undertaking construction with minimum ground disturbance;
- To ensure that ground disturbance does not occur outside of approved areas;
- Ground disturbance complies with relevant legal provisions; and
- Ground disturbance complies with areas specified in RTIO clearing permits and Approval Request areas.

Table 6-2 Management Actions for Ground Disturbance and Clearing

NO.	ACTION	RESPONSIBILITY	TIMING	REFERENCE DOCUMENTS
6.2.1	All personnel informed of the importance of ground disturbance and clearing management and the requirement to keep to existing tracks and roadways.	Calibre Site Construction Manager	Pre-Construction/ Construction	Induction
6.2.2	Prior to ground disturbance activities, an Approvals Request permit must be obtained by Calibre. A copy must be held on site.	Calibre Site Construction Manager	Construction	
6.2.3	Prior to ground disturbance activities contractors must obtain a Calibre Clearing Permit and complete a clearing 'Take 5'. The Calibre Clearing Permit will be smaller than the area covered by the Approvals Request permit unless specific approval by RTIOEP Environment Manager and RTIOEP Project Manager is given and include conditions from RTIOEP Approvals Request Permit.	Contractors	Construction	RTIO-HSE- 0043075 Clearing Permit Procedure RTIO-HSE-0043306 Clearing Permit Form No 188 - Clearing Permit - Take 5 RCE specific clearing permit is currently in preparation.
6.2.4	The boundary of the area to be cleared must be surveyed and suitably defined with survey tape or equivalent to minimise the risk of disturbance outside the designated area.	Calibre Site Construction Manager	Construction	RTIO-HSE- 0043075 Clearing Permit Procedure
6.2.5	Any areas containing significant flora, fauna, heritage or service and utility corridors shall be fenced or suitably marked to prevent damage. Buffer zones will be employed where applicable. Exclusion areas will be demarcated as per the requirements specified in the approvals permit. In addition to these requirements sites that are inside or within 10m of approvals permit boundaries shall also be demarcated. Deviations can only be approved by the RTIOEP Environment Manager and endorsed by the RTIOEP Project Manager.	Calibre Site Construction Manager	Construction	
6.2.6	Plan ground disturbance activities to ensure that minimal disturbance is achieved through the use of appropriate ground engaging plant, use of designated tracks, roadways and use of pre-existing disturbed areas.	Calibre Site Construction Manager	Construction	RTIO-HSE- 0043075 Clearing Permit Procedure

NO.	ACTION	RESPONSIBILITY	TIMING	REFERENCE DOCUMENTS
6.2.7	A site inspection of the area to be disturbed has been conducted with the contractor, Calibre site supervisor and Calibre environmental advisor prior to application for a Clearing Permit. At time of site inspection the following will be explained and detailed: a) extent and purpose of ground disturbance activities, b) Verification with GPS, of boundary pegging c) Where cleared vegetation and topsoil will be stockpiled for later use and management of stockpiles d) Method and depth of topsoil removed e) Method and depth of subsoil removed f) Rehabilitation activities	Calibre Site Construction Manager	Construction	RTIO-HSE- 0043075 Clearing Permit Procedure
6.2.8	Mobile plant operators must receive clear instructions from the Site Construction Manager or delegate on ground disturbance activities; including maps and GPS coordinates of disturbance area. Take 5's must be conducted prior to any shift involving clearing by the operator(s), the contractor supervisor and the Calibre supervisor. Calibre Clearing Permit must be attached to the Job Hazard Analysis (JHA) and kept with the operator at all times.	Contractors	Construction	RTIO-HSE- 0043075 Clearing Permit Procedure
6.2.9	Topsoil must be managed in accordance with IEMS procedure –Soil Management	Calibre Site Construction Manager	Construction	RTIO-HSE-0011596 Soil Management
6.2.10	Inspection of areas undergoing ground disturbance will be monitored (as appropriate) to ensure they meet the guidelines. A Calibre supervisor must be present during all boundary clearing activities or clearing adjacent to exclusion area.	Calibre Site Construction Manager	Construction	RTIO-HSE- 0043075 Clearing Permit Procedure RTIO-HSE- 0043306 Clearing Permit
6.2.11	Verification of compliance with the Calibre Clearing Permit must be undertaken at completion of the clearing works. Ground disturbance outside of permit boundaries will be recorded as an incident and will be rehabilitated in consultation with RTIOEP requirements.	Calibre Site Construction Manager	Construction	RTIO-HSE-0037074 Incident Report Form
6.2.12	All ground disturbance activities and area of disturbance will be reported in the Monthly Environmental Report	Calibre Environmental Advisor	Construction	RTIO-HSE-0015107 Monthly Environmental Report
6.2.13	Emergency clearing activities (e.g. for fire, flood protection) must follow the approvals coordination emergency procedure.	Calibre Site Construction Manager	Construction	RTIO-CR-0001029 Approvals Coordination Emergency procedure

NO.	ACTION	RESPONSIBILITY	TIMING	REFERENCE DOCUMENTS
6.2.14	Ground disturbance activities in MCNP are to adhere to the management plan for these areas. No borrow pits or quarries will be established in these areas without specific formal approval. Please refer to section 6.22 for additional management actions with respect to ground disturbance in the A class reserve; MCNP.	Calibre Construction Manager	Construction	DEC 2007. Millstream-Chichester National Park and Mungaroona Range Nature Reserve Draft Management Plan.

6.3 Topsoil Management

Successful rehabilitation efforts are dependant on the availability of good quality, viable topsoil. Successful topsoil management will result in successful, minimum cost rehabilitation which will meet RTIO criteria and legislative obligations.

Objectives:

- Successfully remove, store, manage and reuse topsoil resources; and
- Compliance with approved licenses, permits and legal provisions.

Table 6-3 Management Actions for Topsoil Management

NO.	ACTION	RESPONSIBILITY	TIMING	REFERENCE DOCUMENTS
6.3.1	Topsoil must be managed in accordance with IEMS procedure – Soil Resource Management.	Calibre Site Construction Manager	Construction	RTIO-HSE-0011596 Soil Resource Management
6.3.2	Procedures for ground disturbance shall be followed prior to removing topsoil and include dust suppression procedures.	Calibre Site Construction Manager	Construction	RTIO-HSE-0011596 Soil Resource Management
6.3.3	Depth of topsoil to be removed is to be in accordance with the Soil Resource Management Procedure and as such; a) 200mm of topsoil will be stripped and stored, where available. If less than 200 mm is available, all available topsoil will be stripped within the clearing area. b) Vegetation and topsoil shall be stripped and stored in windrows or stockpiles as deemed appropriate	Calibre Site Construction Manager	Construction	RTIO-HSE-0011596 Soil Resource Management
6.3.4	Inspection of topsoil removal practices and stockpiles will be conducted (as appropriate) to ensure they meet the guidelines.	Calibre Environmental Advisor	Construction	RTIO-HSE-0011596 Soil Resource Management

NO.	ACTION	RESPONSIBILITY	TIMING	REFERENCE DOCUMENTS
6.3.5	Total area cleared for pre-strip, and amounts of topsoil and subsoil stockpiled will be reported in the monthly environmental report.	Calibre Environmental Advisor	Construction	RTIO-HSE-0015107 Monthly Environmental Report
6.3.9	Topsoil stockpiles will be limited to 2m in height and with side slopes of no more than 20 degrees to reduce the risk of erosion The stockpiles shall not be located within drainage lines. Stockpiles will be sited appropriately to ensure erosion and run off are minimised.	Calibre Site Construction Manager	Construction	RTIO-HSE-0011596 Soil Resource Management
6.3.10	Burning of vegetation stockpiles will not be permitted.	Calibre Site Construction Manager	Construction	

6.4 Flora and Fauna Management

Construction activities have the potential to impact native flora and fauna. Protection of flora and fauna is controlled by the *Wildlife Conservation Act 1950.*

Objectives:

- Minimise the impact of construction activities on existing native flora and fauna;
- Protect declared rare flora and significant priority flora / fauna through avoidance of construction related impacts, wherever practicable; and
- No weed species introduced through construction works.

Table 6-4 Management Actions for Flora and Fauna Management

NO.	ACTION	RESPONSIBILITY	TIMING	REFERENCE DOCUMENTS
6.4.1	The requirements of the IEMS Wildlife Interaction Policy and the Rio Tinto Biodiversity Guidance shall be communicated and implemented on site.	Calibre Environmental Advisor	Pre-Construction/ Construction	Induction/ RTIO-HSE-0013116 Wildlife Interaction Policy
6.4.2	Maps and photographs/ images of Priority flora and fauna shall be supplied to personnel to facilitate identification and on-ground management.	Calibre Environmental Advisor	Construction	
6.4.3	Fencing and/or signage shall be used to protect areas containing significant flora and fauna habitat where there is risk of damage. Access to these areas will be restricted or not permitted.	Calibre Site Construction Manager	Construction	
6.4.4	A procedure shall be established that outlines the requirements for safe relocation of fauna (such as snake relocation) and management of injuries to fauna. The procedure shall include an internal and external contacts list for the	Calibre Environmental Advisor	Construction	To be completed

NO.	ACTION	RESPONSIBILITY	TIMING	REFERENCE DOCUMENTS
	purposes of fauna management.			
6.4.5	Temporary lighting, if required shall take into consideration impacts on fauna and opportunities for minimising fauna impacts.	Calibre Site Construction Manager	Construction	
6.4.6	Any suspected occurrences of significant flora and fauna will be reported to the Site Environmental Advisor.	Calibre/ Site Construction Manager	Construction	Induction/ RTIO-HSE-0013116 Wildlife Interaction Policy
6.4.7	Any trenches will be inspected regularly and designed with suitable egress to prevent stock or fauna entrapment. Drill holes will be capped.	Site Environmental Advisor	Construction	Induction
6.4.8	Feeding and/ or capture of native and fauna or feral animals is not permitted at any construction sites.	Calibre Site Construction Manager		RTIO-HSE-0013116 Wildlife Interaction Policy
6.4.9	Any deaths of native fauna shall be reported as per incident report procedures.	Calibre Site Construction Manager		RTIO-HSE-0037074 Incident Report Form

6.5 Weed Management

Weed invasion is an identified risk for the Project. Physical disturbance, import of fill, and additional movement of vehicles and equipment within the Project area may result in the introduction of additional weed species or the spread of existing weed populations.

Objectives:

- Prevent the introduction and spread of weeds into the Project area;
- Prevent the introduction and spread of weeds into the Millstream Chichester National park; and
- Vehicles and equipment are inspected prior to site entry; and Weed species and distribution during construction is reduced.

Table 6-5 Management Actions for Weed

NO.	ACTION	RESPONSIBILITY	TIMING	REFERENCE DOCUMENTS
6.5.1	All earthmoving and mobile construction equipment shall be inspected for weeds prior to mobilisation to site. An application to bring vehicles to site, accompanied by certificate stating that the equipment is free from earth, weeds and weed propagules, is submitted to Calibre and filed onsite. Additional weed hygiene measures will be developed and implemented where required. The weed hygiene inspection is conducted to ensure that: • No dirt or debris is on vehicles and mobile plant; and • No visible plant or organic material is attached.	Contractors	Construction	Calibre Form 44 - Application to bring vehicles/ mobile equipment onto site Calibre Form 135 Mobilisation/Demobilisat-ion Weed Hygiene Certificate
6.5.2	Borrow pits will be inspected for weeds prior to disturbance, following rainfall events and periodically during the weed season. Where weeds are found to exist in a quarry/borrow pit, a specific management program will be established to minimise the risk of weed propagules leaving the area and to control weeds.	Contractors / Calibre Environmental Advisor	Construction	Borrow Pit Specification and Management (RTIO-HSE-0015216)
6.5.3	Posters and other educational material relating to weed identification and control shall be displayed in the workplace.	Calibre Environmental Advisor	Construction	IEMS posters
6.5.4	Signage shall be used where necessary to communicate the weed status of an area and hygiene requirements.	Calibre Environmental Advisor	Construction	
6.5.5	Sites will be inspected to determine weed status; - at the commencement of works - following rainfall events (timing of post rainfall inspections to be determined in consultation with RTIOEP Approvals Specialist) and; - at decommissioning. Weed species and locations which have been identified during surveys will be documented within clearing permit information.	Calibre Environmental Advisor	Construction	
6.5.6	Sites which are likely to facilitate germination of weeds will be inspected after rainfall events.	Calibre Environmental Advisor	Construction	

NO.	ACTION	RESPONSIBILITY	TIMING	REFERENCE DOCUMENTS
6.5.7	Sites will be inspected at the completion of works to verify effectiveness with weed hygiene controls.	Calibre Environmental Advisor	Construction	
6.5.8	A contingency for managing equipment that contains or potentially contains weed propagules shall be established.	Calibre Environmental Advisor	Construction	
6.5.9	Where weeds are identified, GPS coordinates of the site shall be taken and locations maintained on a register or database.	Calibre Site Construction Manager / Environmental Advisor	Construction	
6.5.10	Site specific inductions will educate all construction personnel in the identification of serious environmental weeds such as Ruby Dock. A list and means of identifying Declared Plants and other weeds on site shall be made available by the Site Environmental Advisor to all personnel involved in or managing clearing activities.	Calibre Environmental Advisor	Construction	Induction
6.5.11	Introduce a weed monitoring and control program as advised by the RTIOEP Approvals Specialist for existing weed sites, and in the event new sites are identified or introduced.	Calibre Environmental Advisor	Construction	
6.5.12	Where an area is infested with weeds wash down of ground engaging equipment such as; front end loaders, graders, tracked equipment and out riggers is required at the site prior to leaving.	Calibre Site Construction Manager	Construction	
6.5.13	Wash down facilities will be designed to prevent run off to the surrounding environment.	Calibre Site Construction Manager	Construction	
6.5.14	Failures in weed hygiene processes will be reported as an incident through the incident reporting process.	Calibre Site Construction Manager	Construction	RTIO-HSE-0037074 Incident Report Form

6.6 Heritage Management

The Project area lies within two Native Title claims inclusive of the Ngarluma Group and Yindjibarndi as described in section 3.3.2. Heritage surveys will be conducted prior to construction activities to identify any heritage sites.

Aboriginal heritage sites include cultural and ceremonial sites, rock engravings, scarred trees, stone arrangements, rock shelters, artefact scatters, water sources, burial sites, shell middens, stone quarries and campsites. Aboriginal heritage sites are protected by the *Aboriginal Heritage Act 1972.*

Several areas of non-indigenous heritage are also contained within the project area, most of these are protected under the Register of National Estate.

Objectives:

- Report and protect heritage sites that may be identified during construction;
- Maintain access to sites for traditional landowners; and
- Avoid unauthorised disturbance to heritage sites, as per the requirements of the *Aboriginal Heritage Act* 1972.

Table 6-6 Management Actions for Heritage

NO.	ACTION	RESPONSIBILITY	TIMING	REFERENCE DOCUMENTS
6.6.1	Report any possible newly identified Aboriginal heritage sites to the Calibre environmental advisor or Calibre construction manager and stop work until further instruction.	All Personnel	Construction	Induction
6.6.2	Ensure that identified Aboriginal heritage sites within 100m of planned construction activities or where deemed of being a high risk of being disturbed are demarcated with signage, flagging and fencing as appropriate.	Calibre Site Construction Manager	Construction	Project Aboriginal Heritage Management Procedure (to be developed)
6.6.3	Heritage sites that have a potential to be affected by construction activities will be monitored to ensure no unauthorised disturbance.	Calibre Environmental Advisor Calibre Site Construction Manager	Construction	Project Aboriginal Heritage Management Procedure (to be developed)
6.6.4	Any unauthorised disturbance of a heritage site will be immediately reported as an incident.	Calibre Site Construction Manager	Construction	RTIO Incident Report Form RTIO-HSE-0037074
6.6.5	Requirements of the *Aboriginal Heritage Act 1972* and the management of heritage sites in the project area will be covered in the site inductions	Site Environmental Advisor	Construction	Induction
6.6.6	A Calibre Supervisor or approved delegate will be present during all clearing activities adjacent to known heritage sites and ensure appropriate demarcation.	Calibre Site Construction Manager	Construction	RTIO-HSE- 0043075 Clearing Permit Procedure

6.7 Borrow Pit Management

Borrow pits are an area where gravel, sand, rock or fill material is removed and used as construction material. They have the potential to affect site drainage, spread weeds, create dust and negatively impact visual amenity if not managed correctly.

Objectives:

- Develop and rehabilitate borrow pits to minimise their impact and comply with RTIO standards; and
- Borrow pits comply with approved borrow pit management plans.

Table 6-7 Management Actions for Borrow Pit Management

NO.	ACTION	RESPONSIBILITY	TIMING	REFERENCE DOCUMENTS
6.7.1	Borrow pits must be developed and managed in accordance with IEMS procedure – Borrow Pit Specification and Management	Calibre Site Construction Manager	Construction	RTIO-HSE-0015216 Borrow Pit Specification and Management
6.7.2	A borrow pit management plan will be developed for each borrow pit which follows the Borrow Pit Specification and Management guidelines and includes: • material testing methodology; • extraction methods and dust suppression; • drainage management; • weed management; and • rehabilitation details. Any variations to the borrow pit management plan must approved by the RTIOEP Project Manager.	Contractors	Construction	RTIO-HSE-0015216 Borrow Pit Specification And Management
6.7.3	Any disturbance requires authorisation.	Calibre Site Construction Manager	Construction	RTIO-HSE-0015216 Borrow Pit Specification and Management
6.74	Inspection of borrow pits will be conducted (as appropriate) to ensure they meet the guidelines. Photographs of borrow pits will be taken during inspections to provide a photographic record of borrow pit development.	Calibre Environmental Advisor	Construction	RTIO-HSE-0015216 Borrow Pit Specification and Management
6.7.5	Borrow pit activities (area disturbed and volumes removed) will be reported in the monthly environmental report.	Calibre Environmental Advisor	Construction	RTIO-HSE-0015107 Monthly Environmental Report
6.7.6	Weeds and hygiene at borrow pits will be managed in accordance with Section 6.5 Weed Management.	Calibre Construction Manager/ Calibre Environmental Advisor	Construction	Section 6.5 Weed Management.

6.8 Acid Sulphate Soil Management

Acid Sulphate Soils may occur in the Project area, where the soil may contain iron sulphides. When these sulphides are oxidised through disturbance, they have the potential to form ASS. They have the potential to affect vegetation, groundwater and infrastructure assets by acidification.

Objectives:

- Determine location of ASS; and
- Manage ASS during construction so that the environment and assets are not adversely impacted.

Table 6-8 Management Actions for Acid Sulphate Soil Managment

NO.	ACTION	RESPONSIBILITY	TIMING	REFERENCE DOCUMENTS
6.8.1	Areas of ASS to be determined in areas impacted by construction activities.	Calibre Project Manager	Pre-Construction	
6.8.2	Groundwater Bores in ASS areas to be tested for acidity and managed and monitored as required.	Calibre Project Manager	Pre-Construction	
6.8.3	Topsoil management practices to be followed and ASS areas and soil movement/usage to be documented.	Calibre Site Construction Manager	Construction	
6.8.4	Lime-dosing to be used as required, depending on level of acidity.	Calibre Site Construction Manager	Construction	

6.9 Dust Management

The Pilbara is a naturally dusty environment and strong winds can increase local dust levels. Dust can be generated during construction activities such as site preparation, materials movement and general equipment movements on unsealed construction areas. Excessive dust levels can have adverse effects on human health and adjacent vegetation and create an uncomfortable and potentially unsafe working environment.

Objectives:

- To prevent or minimise dust levels at construction areas so that a safe working environment is maintained.

Table 6-9 Management Actions for Dust

NO.	ACTION	RESPONSIBILITY	TIMING	REFERENCE DOCUMENTS
6.9.1	Vegetation clearing will be kept to a minimal area as practicable.	Calibre Site Construction Manager	Construction	
6.9.2	Vehicle speeds on haul roads, access roads, and work areas will be restricted	All Personnel	Pre-Construction / Construction	
6.9.3	Dust suppression such as water trucks will be used on haul roads, access roads, work and.	Calibre Site Construction Manager	Pre-Construction / Construction	
6.9.4	Dust minimising devices to be used where appropriate. Ensure dust suppression equipment is operational	Calibre Site Construction Manager	Pre-Construction / Construction	
6.9.5	Restrict work activities on sites where dust levels are excessive until dust suppression is implemented	Calibre Site Construction Manager	Pre-Construction / Construction	
6.9.6	Water used in construction and dust suppression activities has all the required government approvals/licensing and extraction does not exceed licensing limits.	Calibre Site Construction Manager	Pre-Construction / Construction	LAORS DEC / DoW / DMP licence (where applicable)
6.9.7	Design of permanent infrastructure shall comply with the Environmental Design Criteria – Permanent Facilities	Calibre Site Construction Manager	Pre-Construction / Construction	Environmental Design Criteria for Permanent Facilities DC-N001
6.9.8	Any excessive dust generation shall be reported as per incident reporting procedures	Calibre Site Construction Manager	Construction	RTIO Incident Report Form RTIO-HSE-0037074
6.9.9	Visual dust assessments at construction sites will be included in the site inspection programme and formal dust monitoring shall be carried out as required.	Calibre Site Environmental Advisor	Construction	

6.10 Surface Water, Groundwater and Drainage Management

Fresh water is a valuable resource in the Pilbara and works associated with the Project traverse through a public drinking water source (PDWSA). There is a potential for poorly managed construction operations to cause pollution of surface and ground water through spills or discharges of contaminated water and hazardous substances. Poor design and placement of drainage structures and poor design of excavations can result in ponding of water, drainage shadows leading to vegetation loss, scouring, sediment loading and bank erosion.

Groundwater drawdown has the potential to adversely impact the surrounding environment. Pollution of groundwater can occur from chemicals, hydrocarbon materials and wastewater streams and can impact on water catchments and drinking water supplies.

Objectives:

- Ensure efficient, safe and sustainable use and protection of water resources and ecosystems;
- Water use shall be minimised wherever possible;
- Water shall only be taken from licensed sources;
- Compliance with approved licenses, permits and legal provisions;
- Groundwater extraction and reuse volumes to be clearly defined, monitored and adhered to;
- Disruption and pollution to local drainage patterns shall be minimised;
- No significant erosion or sedimentation; and
- Protection of water quality to ensure a safe drinking water supply.

Table 6-10 Management Actions for Surface Water, Ground Water and Drainage

NO.	ACTION	RESPONSIBILITY	TIMING	REFERENCE DOCUMENTS
6.10.1	A water inventory shall be maintained and shall include: •Abstraction monitoring from each source including quantity and quality •Discharge monitoring including quantity, quality and receptor •Quantity of water that is recycled and re-used •Aquifer monitoring including bore levels and water quality	Calibre Site Construction Manager	Construction	DoW / DEC Licence (where applicable) RTIO-HSE-0040672
6.10.2	Water storages (e.g. Turkeys Nests) should be designed and constructed in accordance with the design Environmental Design Criteria DC-N002 for Temporary Facilities**.**	Calibre Site Construction Manager	Construction	Environmental Design Criteria for Temporary Facilities DC-N002
Groundwater and Surface Water Licences				
6.10.3	Water shall only be taken from points authorised by RTIOEP and licensed by DoW.	Calibre Site Construction Manager	Construction	
6.10.4	Copies of all water licenses shall be held on site.	Calibre Environmental Advisor	Construction	
Meters, Calibration and Reporting				
6.10.5	Bores shall be fitted with a sample tap / valve and probe access point in addition to a flow meter that complies with the Rights in Water and Irrigation (Approved Meters) Order 2009.	Calibre Site Construction Manager	Construction	
6.10.6	Calibration of meters to be carried out prior to usage / installation and certificates for meters are to be retained on site.	Calibre Site Construction Manager	Construction	
6.10.7	The amount of groundwater extracted shall be reconciled regularly against the licence limit. The frequency of reconciliation must be commensurate with usage and risk of approaching licence limit.	Calibre Site Construction Manager	Construction	DoW licence (where applicable)
6.10.8	Water usage data must be recorded and forwarded monthly to Calibre Environmental Advisor.	Calibre Site Construction Manager	Construction	RTIO-HSE-0015107 Environmental Monthly Report Template
Water Monitoring				
6.10.9	Water quality monitoring shall be undertaken as defined by water licenses or as directed by Calibre/RTIOEP.	Calibre Site Construction Manager	Construction	DoW licence (where applicable)
6.10.10	Equipment used to monitor groundwater quality shall be calibrated and associated records maintained.	Calibre Site Construction Manager	Construction	
6.10.11	A monitoring program and schedule shall be established for groundwater, surface water and wastewater where applicable. This shall be approved by RTIO expansion projects.	Calibre Site Construction Manager	Construction	

NO.	ACTION	RESPONSIBILITY	TIMING	REFERENCE DOCUMENTS
6.10.12	The monitoring program shall outline where a NATA registered laboratory will be used for analysis of water samples.	Calibre Site Construction Manager	Construction	
6.10.13	Monitoring Data to be entered into EnviroSys.	Calibre Site Construction Manager	Monthly during Construction	
Stormwater/Surface Water Management				
6.10.14	All potentially contaminated stormwater (sediment and hydrocarbons) is treated prior to discharge to the environment.	Calibre Site Construction Manager	Construction	
6.10.15	Sediment basins shall be constructed where discharges from the premises are likely to occur. These basins are to be designed to allow sufficient retention time to reduce suspended solids prior to discharge.	Calibre Site Construction Manager	Construction	Environmental Design Criteria for Temporary Facilities DC-N002
6.10.16	Sediment basins must be regularly inspected and maintained.	Calibre Site Construction Manager	Construction	Form 163 Weekly Environmental Inspection Checklist
6.10.17	Where required, clean water diversion systems and contaminated water collection systems shall be established as soon as practicable after commencement of site works.	Calibre Site Construction Manager	Construction	
Works within Catchments - Public Drinking Water Source Areas (PDWSA)				
6.10.18	All works within public drinking water catchments will be in accordance with the relevant DoW Water Quality Protection Notes	Calibre Site Construction Manager	Construction	WQPN 60 – Tanks for Mobile Fuel Storage in PDWSA WQPN 65 - Toxic and Hazardous Substances – storage and use WQPN 36 – Protecting PDWSA WQPN 84– Rehabilitation of Disturbed Land in PDWSA WQPN 25 – Land Use Compatibility WQPN 10 – Contaminated Spills Emergency Response WQPN 28 – Mechanical servicing and workshops
6.10.19	Any hydrocarbon or chemical spill incidents and near misses will be reported as per incident reporting procedures and reported to the site environmental advisor	Calibre Site Construction Manager		RTIO Incident Report Form RTIO-HSE-0037074

6.11 Hydrocarbon Management

Hydrocarbons (fuels, oils, lubricants) can contaminate soil, surface water and groundwater, and have adverse impacts on flora and fauna if released to the environment. During construction there is a risk of hydrocarbon release due to:

- refuelling mobile plant, vehicles and equipment;
- hydraulic hose failures and other mechanical failure;
- hydrocarbon transport and storage;
- washdown and maintenance of mechanical equipment;
- hydrocarbon waste containment and disposal; or
- incorrect spill response.

Objectives:

- Ensure all hydrocarbons and hydrocarbon contaminated wastes are transported, handled, stored and disposed of correctly in order to prevent contamination of soils, surface water and groundwater.

Compliance with approved licenses, permits and legal provisions.

Table 6-11 Management Actions for Hydrocarbons

NO.	ACTION	RESPONSIBILITY	TIMING	REFERENCE DOCUMENTS
6.11.1	Where required, dangerous goods licenses are obtained and copies held on site.	Calibre Environmental Advisor	Construction	
6.11.2	Regular inspections of construction sites, workshops, storage areas, maintenance areas, washdown bays will be undertaken for adherence to hydrocarbon management procedures.	Calibre Environmental Advisor / Calibre Area Supervisors	Construction	
Storage And Bunding				
6.11.3	Hydrocarbon storage, including temporary storage, shall comply with the applicable minimum standard set out in the IEMS environmental design principles – permanent facilities (DC-N001) or temporary facilities (DC-N002).	Calibre Project Manager / Site Construction Manager	Design/ Construction	DC-N001 Permanent Facilities DC-N002 Environmental Design Principles – Temporary Facilities (RTIO-HSE-0040672)
6.11.4	All storage tanks and associated piping must be above ground and be secondarily contained unless otherwise approved by RTIOEP (Managing Director) and supported by a risk assessment. For exemption refer to 'Underground Hazardous Pipeline or Tank Authorisation Template'(RTIO-HSE-0033842).	Calibre Project Manager / Site Construction Manager	Design/ Construction	Underground Pipelines or Tanks Containing Hazardous Materials Authorisation Template (RTIO-HSE-0033842). Environment Standard E5 Hazardous Materials and Contamination Control.

NO.	ACTION	RESPONSIBILITY	TIMING	REFERENCE DOCUMENTS
6.11.5	Monthly inspections of construction sites, workshops, storage and maintenance areas, and washdown bays are to be carried out to check for adherence to good Hydrocarbon management procedures.	Calibre Site Construction Manager	Construction	
Refuelling				
6.11.6	Refuelling shall be attended at all times.	All Personnel	Construction	
6.11.7	Refuelling shall take place inside a bunded area in accordance with the design criteria – temporary facilities	Calibre Project Manager / Site Construction Manager	Design/ Construction	DC-N002 Environmental Design Principles – Temporary Facilities (RTIO-HSE-0040672)
6.11.8	Where mobile refuelling is conducted: •Dry-break hoses should be used; •Refuelling shall not occur within 30m of a watercourse; and •Mobile refuelling trucks must carry spill kits. Drip trays will be used whilst mobile refuelling is conducted in PDWSA.	Calibre Site Construction Manager	Construction	WQPN 65 - Toxic and Hazardous Substances – storage and use
Temporary Workshops				
6.11.9	Temporary workshops shall be constructed in accordance with DC-N002 Environmental Design Principles – Temporary Facilities and operated such that: •1 A High Density Polyethylene (HDPE) liner of at least 1mm thickness shall be installed approximately 300mm beneath surface level. •2 Transportable coalescing separator plates are to be used on discharge water. •3 The facility shall be adequately protected from stormwater flows. •4 No washing down is to be conducted within the workshop. •5 The site shall be subject to soil assessment at the completion of the works and appropriate remediation and validation shall be undertaken to restore the area to its pre-existing condition. •6 The HDPE liner shall be removed on completion of the works.	Calibre Project Manager / Site Construction Manager	Design / Construction	DC-N002 Environmental Design Principles – Temporary Facilities (RTIO-HSE-0040672)
Temporary Washdown Areas				
6.11.10	Equipment washdown must occur in designated areas only. Facilities to be in accordance with the Environmental Design Criteria – Temporary Facilities.	Calibre Site Construction Manager	Construction	DC-N002 Environmental Design Criteria – Temporary Facilities (RTIO-HSE-0040672)
6.11.11	Water use should be minimised at all times, and the use of solvent-based degreasers is not permitted.	Calibre Site Construction Manager	Construction	

NO.	ACTION	RESPONSIBILITY	TIMING	REFERENCE DOCUMENTS
6.11.12	All mechanical equipment must occur on an impervious pad. The area should be graded and bunded to divert stormwater runoff from entering the washdown area and becoming contaminated.	Calibre Site Construction Manager	Construction	DC-N002 Environmental Design Criteria – Temporary Facilities (RTIO-HSE-0040672)
6.11.13	The hierarchy for management of waters collected from washdown facilities is as follows: • Treatment for sediments and hydrocarbons (via use of transportable coalescing separator plates) then re-use of treated waters (e.g.: dust suppression). • Disposal (in order of preference) via a) Evaporation and sludge removal using appropriately licensed providers as required b) Removal of waters offsite using appropriately licences providers or c) Treatment for sediments and hydrocarbons then discharge in a manner that minimises erosion impacts.	Calibre Site Construction Manager	Construction	
6.11.14	For treatment of hydrocarbon contaminated waters referred to in clause 6.11.13 above, output water quality must not exceed the more stringent of: • 30mg/L oil/grease content; or • The site's specific licence/approval conditions (if applicable). Hydrocarbons recovered must be collected and securely stored for recycling, destruction or disposal at an approved site. Treatment facilities must be designed to cope with the peak wastewater flows. Sampling to be conducted to determine residual hydrocarbons	Calibre Site Construction Manager	Construction	
Spill Response				
6.11.15	Spill response must be in accordance with the requirements of IEMS procedure – spill response	Calibre Site Construction Manager	Construction	RTIO-HSE-0010867 Spill Response Procedure
6.11.16	Spill response equipment, including absorbent booms/socks/pillows and matting, should be readily available and used in work environments including mobile plant. Equipment should be clearly marked and housed in a manner that facilitates quick response to spills. This includes mobile plant.	Calibre Site Construction Manager	Construction	
Waste Oil and Hydrocarbon Product Disposal				
6.11.17	Waste oil, oily rags, oil filters, and any other hydrocarbon related wastes shall be segregated and disposed through an appropriately licensed waste service provider.	Calibre Site Construction Manager	Construction	

NO.	ACTION	RESPONSIBILITY	TIMING	REFERENCE DOCUMENTS
6.11.18	Hydrocarbon products shall not be incinerated on site as a disposal option.	Calibre Site Construction Manager	Construction	
Waste Oil And Hydrocarbon – Product Disposal				
6.11.19	In the event that hydrocarbon or other contaminated areas are discovered during the course of construction, Rio Tinto Iron Ore Expansion Projects (RTIOEP) shall be notified immediately. Where practicable the impacted area shall be made safe (i.e. physical hazards associated with an excavation shall be controlled) and the areas cordoned off for further inspection and assessment. Impacted sites are to be added to the Contaminated Sites Register where applicable.	Calibre Environmental Advisor	Construction	RTIO Incident Report Form RTIO-HSE-0019412 Contaminated Sites Register

6.12 Waste Management

Various types of waste from construction activities will be generated including:

- general office waste – paper, cardboard, printer cartridges, plastic, cans, glass, packaging materials;
- building and demolition waste – packaging material, scrap steel, concrete, pipe/PVC cut-offs, wood scraps, welding rods/crucibles, plastic, tyres;
- putrescible waste – food scraps, kitchen waste; and
- hydrocarbon waste – engine oil, lubricants, solvents, oily rags.

Incorrect waste disposal can result in groundwater, surface water or soil contamination, vegetation or fauna impacts, poor visual amenity and health and safety issues.

Hazardous materials and waste will be covered under Management Procedure 5.13.

Objectives:

- To minimise the impact of waste disposal on the environment and prevent pollution of the air, land and water;
- To reduce, reuse or recycle the amount of waste;
- To collect, segregate, transport and dispose of wastes in an environmentally acceptable manner and in accordance with all relevant legislation;
- Compliance with approved licenses, permits and legal provisions; and
- Volumes of wastes recorded in reports match landfill records.

Table 6-12 Management Actions for Waste

NO.	ACTION	RESPONSIBILITY	TIMING	REFERENCE DOCUMENTS
6.12.1	All waste streams and their collection and disposal must be identified. This includes but is not limited to: waste oil, grease, solvent, inhibitors, oily-water mixtures, empty hydrocarbon drums, oil filters, oily rags, absorbent materials.	Calibre Site Construction Manager	Construction	
6.12.2	Sufficient bins, recycling and general waste collection areas, will be established to facilitate the management of waste. Putrescibles waste shall be stored in covered receptacles at all times, prior to disposal	Calibre Site Construction Manager	Construction	
6.12.3	Waste bins are colour coded and labelled in accordance with RTIO procedures to facilitate segregation of waste types.	Calibre Site Construction Manager	Construction	RTIO-HSE-0010849 IEMS Waste Management Procedure
6.12.4	The following materials shall be recycled unless otherwise approved: scrap metal, paper/cardboard, wood pallets, aluminium, glass, office waste (including printer cartridges) and waste oil.	Calibre Site Construction Manager	Construction	
6.12.5	Burning of waste is prohibited.	Calibre Site Construction Manager		
6.12.6	Receipts to be maintained of waste type, amount (mass/volume), and disposal method (recycled, re-used, disposal location). Records reported in monthly report.	Calibre Site Construction Manager / Environmental Advisor	Construction (Monthly)	RTIO-HSE-0015107 Environmental Monthly Report Template
6.12.7	Controlled waste (including hydrocarbons and contaminated soil) will be handled and disposed of in accordance with the *Environmental Protection (Controlled Waste) Regulations 2004.*	Calibre Site Construction Manager	Construction	RTIO-HSE-0014175 Controlled Waste Regulations Pilbara Iron Summary.
6.12.8	An inspection and maintenance program is established for all waste facilities including landfills, waste storage areas. Housekeeping inspections shall confirm segregation of waste and recyclables and that adequate recycling is occurring where practicable.	Calibre Site Construction Manager / Environmental Advisor	Construction	Form 163 – Weekly Environmental Inspection Checklist
6.12.9	An appropriate landfill site to be identified for use, otherwise RTIO approval is required to establish a landfill site in accordance with RTIO Landfill Management Plan.			
6.12.10	Where it is intended to use existing Landfills, permission to use the facility must be obtained from the facility owner. This is also to include discussions with operations and their current waste management requirements for such landfills. All existing requirements of the facility must be complied with unless specified otherwise.	Calibre Site Construction Manager	Construction	RTIO-HSE-0014175 Controlled Waste Regulations Pilbara Iron Summary.

NO.	ACTION	RESPONSIBILITY	TIMING	REFERENCE DOCUMENTS
	Management of the facility including access and responsibilities must be negotiated with the facility owner.			
6.12.11	Cut material may also be generated from construction activities and may be viewed as waste material. This material should be used as fill and for rehabilitation wherever possible and practicable.			
6.12.12	Mineral wastes will be handled and disposed of inline with the RTIO Mineral Waste Management Plan			Mineral Waste Management Plan RTIO-HSE-0040347
6.12.13	littering shall be avoided at all times and work and office sites will be kept clean and tidy. Non Mineral wastes will be managed in accordance with the non mineral waste management procedure			Non Mineral Waste Management Plan RTIO-HSE-0010849

6.13 Sewage and Wastewater Management

Sewage and wastewater will be generated from construction crib rooms and ablutions within the project area. Sewage and wastewater has the potential to infiltrate surface waters and ground waters, cause odours and pollute soil if not adequately controlled.

Objectives:

- To minimise the impact of sewage and wastewater disposal on the environment and prevent pollution of the air, land and water; and
- Compliance with approved licenses, permits and legal provisions.

Table 6-13 Management Actions for Sewage and Wastewater

NO.	ACTION	RESPONSIBILITY	TIMING	REFERENCE DOCUMENTS
6.13.1	Wastewater treatment plants (WWTP) will be designed with the requirements of the WWTP standard specification as a minimum requirement.	Calibre Project Manager / Site Construction Manager	Design / Construction	RTIO-HSE-0018422 WWTP Standard Specification
6.13.2	Effluent sampling and monitoring shall be to RTIOEP guidelines and shall be entered into EnviroSys.	Calibre Site Construction Manager	Construction	RTIO-HSE-0019315 WWTP – Discharge Sampling And Monitoring
6.13.3	All WWTP's will comply with relevant DEC licence, Department of Health (DoH) and Shire requirements	Calibre Project Manager / Site Construction Manager	Design / Construction	DEC Licence / DoH Approval
6.13.4	A wastewater operation and maintenance manual will be produced and kept on site, which will include a maintenance and inspection schedule and define clear accountabilities for all	Calibre Site Construction Manager	Construction	RTIO-HSE-0018427 WWTP Operations And Maintenance Guide

	wastewater facilities on site. The manual will comply with RTIO-HSE-0018427.			
6.13.5	Training for personnel responsible for WWTP effluent sampling must be provided and must include a competency assessment.	Calibre Site Construction Manager	Construction	
6.13.6	Portable toilets and WWTPs will be designed in accordance with the design criteria – permanent facilities or design criteria – temporary facilities	Calibre Project Manager / Site Construction Manager	Design / Construction	DC-N001 Design Criteria – Permanent Facilities (RTIO-EP-0361086) DC-N002 Design Criteria – Temporary Facilities (RTIO-HSE-0040672)

6.14 Hazardous Material Management

Hazardous materials can present a significant risk to the environment if allowed to enter watercourses, leach into the soil or if particles become airborne. The health and safety of personnel can also be put at risk.

Hydrocarbons have been covered under Management Procedure 5.10.

Objectives:

- Ensure the safe and responsible use of all hazardous materials in ways commensurate with their risk to the environment; and
- Compliance with approved licenses, permits and legal provisions.

Table 6-14 Management for Hazardous Materials

NO.	ACTION	RESPONSIBILITY	TIMING	REFERENCE DOCUMENTS
6.14.1	Application must be made to Calibre for approval of any chemical or hazardous material prior to its mobilisation to site. Chemicals not approved shall be prohibited from site.	Calibre Site Construction Manager	Construction	Form 038 – Application to bring Hazardous Material to site
6.14.2	Design of hazardous material storage areas will comply with legislative guidelines, RTIOEP standards and RTIOEP design guidelines.	Calibre Project Manager / Site Construction Manager	Design / Construction	DC-N001 Permanent Facilities DC-N002 Design Criteria – Temporary Facilities (RTIO-HSE-0040672)
6.14.3	Material Safety Data Sheets (MSDS) shall be kept on site for all hazardous materials in their area of use. A duplicate copy must be provided to emergency response personnel.	Calibre Site Construction Manager	Construction	
6.14.4	All containers shall be labelled.	Calibre Site Construction Manager	Construction	
6.14.5	Spill response shall be in accordance with IEMS procedure – Spill Response.	Calibre Site Construction Manager	Construction	RTIO-HSE-0010867 Spill Response
6.14.6	Hazardous material storage and	Calibre Site	Construction	Form 038 –

NO.	ACTION	RESPONSIBILITY	TIMING	REFERENCE DOCUMENTS
	usage shall be in approved areas for approved purposes only. A hazardous material register shall be maintained of all approved hazardous materials.	Construction Manager		Application to bring Hazardous Material to site Form 039 – Hazardous Material Register
6.14.7	Appropriate fire detection and protection equipment shall be installed in all fire hazardous work and storage areas.	Calibre Site Construction Manager	Construction	
6.14.8	All hazardous materials storage areas will be inspected on a weekly basis as part of a monitoring program.	Calibre Environmental Advisor	Construction	Form 039 – Hazardous Material Register Form 163 – Weekly Environmental Inspection Checklist
Ammonium Nitrate from WWTP				
6.14.9	Loading and unloading of Ammonium Nitrate (AN) (e.g. from the AN transport truck into storage or from storage into the ANFO truck) must occur in a contained area that facilitates easy recover of spills. Where possible, this area should be undercover.	Calibre Site Construction Manager	Construction	DC-N002 Design Criteria – Temporary Facilities (RTIO-HSE-0040672)
6.14.10	Minimise the catchment area of AN load and storage area and ensure that uncontaminated runoff is directed away from the facility. Runoff from within the facility must drain to a lined containment pond to allow collection of contaminated water.	Calibre Project Manager / Site Construction Manager	Design / Construction	
6.14.11	Any AN spillage must be recovered and returned to the appropriate storage area. Small quantities of AN and AN contaminated soil should be disposed at an existing landfarm with the approval of the facility manager. If no landfarm is available it will be sent to a suitable landfill.	Calibre Site Construction Manager	Construction	
Emulsion Storage				
6.14.12	Emulsion tanks must be mounted on hardstand compacted earth or concrete pads. Concrete pads must be placed under transfer points for easy clean up of spillage.	Calibre Site Construction Manager	Construction	
Asbestiform and Fibrous Materials				
6.14.13	Where there is a risk that asbestiform or fibrous materials may be encountered, a process must be established to manage associated risks. This must include: disposal requirements for personal protective equipment (PPE) and other disposable equipment used, details of disposal points and collection areas and authorised waste service providers for removal of waste from site. This is also to include the procedures outlined in	Calibre Site Construction Manager	Construction	CP-PLN-K-001 Dust Management Plan

NO.	ACTION	RESPONSIBILITY	TIMING	REFERENCE DOCUMENTS
	6.20.14 and 6.20.15			
6.14.14	Machine air filters that may be affected by asbestiform or fibrous materials shall not be reconditioned for re-use.	Calibre Site Construction Manager	Construction	
6.14.15	Material containing asbestos must be labelled with “caution asbestos” in letters not less than 50mm high (where practicable).	Calibre Site Construction Manager	Construction	
Contaminated Sites Register				
6.14.16	Calibre shall maintain a register of known contaminated sites as well as all sites with the potential to become contaminated sites. The register will be provided to Operations so that the Site register is up to date	Calibre Site Construction Manager	Construction	(RTIO-HSE-0019412) Contaminated Sites Register
6.14.17	The register must be completed using the IEMS template – contaminated sites register	Calibre Site Construction Manager	Construction	(RTIO-HSE-0019412) Contaminated Sites Register

6.15 Noise and Vibration Management

Noise and vibration will result from construction due to the operation of earthmoving and construction equipment and blasting activities. The largest towns within proximity to the Project area are Wickham and Roebourne.

Objectives:

- Ensure a safe working environment by minimising noise and vibration levels; and
- No significant impacts on the natural environment or local community from excessive noise or vibration.

Table 6-15 Management Actions for Noise and Vibration

NO.	ACTION	RESPONSIBILITY	TIMING	REFERENCE DOCUMENTS
6.15.1	Where modelling or monitoring results indicate that noise and/or vibration is a significant risk, a management plan shall be established to ensure that regulatory requirements and community expectations are met. This must address any out of hours work if it is to occur.	Calibre Site Construction Manager	Construction	
6.15.2	Construction vehicles and equipment shall be fitted with exhaust mufflers to suppress noise	Calibre Site Construction Manager	Construction	
6.15.3	Equipment with faulty or inefficient mufflers/noise dampers must not be used	Calibre Site Construction Manager	Construction	
6.15.4	Construction work must be carried out in accordance with Section 6 of Australian standard 2436-1981 “Guide To Noise Control on Construction, Maintenance and Demolition Sites”.	Calibre Site Construction Manager	Construction	AS 2436-1981

NO.	ACTION	RESPONSIBILITY	TIMING	REFERENCE DOCUMENTS
6.15.5	Screens, enclosures and other noise mitigating devices shall be used where there is a risk of unacceptable noise levels to the community and employees .	Calibre Site Construction Manager	Construction	
6.15.6	A risk assessment shall be performed to identify potential environmental risks and controls for blasting.	Calibre Site Construction Manager	Construction	
6.15.7	Blast management plans must include an assessment of proximity to sensitive receptors and must duly consider; • 1 Advanced notification to the community (exploration camp, construction personnel. • 2 Requirements for additional environmental emergency procedures.	Calibre Site Construction Manager	Construction	

6.16 Fire Management

The use of machinery and equipment, particularly hot work equipment, has the potential to increase the risk of fire.

Prevention of fire is a key priority in all RTIO Operations, especially field operations in the highly flammable Spinifex vegetation. The emergency response and preparedness plan is being developed and will include communications with key stakeholders including DEC.

Objective:

- To minimise the potential for construction activities to result in fires; and
- No fires initiated by construction works and safe containment of all naturally occurring fires (e.g. lightning strikes).

Table 6-16 Management Actions for Fire

No.	ACTION	RESPONSIBILITY	TIMING	REFERENCE DOCUMENTS
6.16.1	Lighting of fires is prohibited.	All personnel, Calibre Site Construction Manager	Construction	Induction
6.16.2	Ensure hot work permits are obtained prior to commencing any hot work.	All personnel	Construction	
6.16.3	Regular fire safety inspections and routine maintenance of fire suppression equipment.	Calibre Site Construction Manager	Construction	
6.16.4	Notify relevant personnel and implement fire suppression in event fire outbreak occurs.	All personnel	Construction	Emergency Response Manual to be written.
6.16.5	Fire management and cigarette smoking rules will be covered in site inductions	Calibre Site Environmental Advisor	Construction	Induction

6.17 Greenhouse Gas Management

Rio Tinto has established an Environmental Standard for greenhouse gas emissions has been to ensure greenhouse gas (GHG) emissions minimisation for Rio Tinto projects and operations.

Objectives:

- all GHG emission data captured for the Project; and
- Minimise GHG emissions where practicable.

Table 6-17 Management Actions for GHGs

NO.	ACTION	RESPONSIBILITY	TIMING	REFERENCE DOCUMENTS
6.17.1	Ensure appropriate monitoring systems (flow meters and construction power usage, calibration records) are established for the recording and reporting of GHG emissions.	Calibre Project Manager / Site Construction Manager	Construction	
6.17.2	All personnel must be made aware of any project specific GHG reduction or energy efficiency programmes in place and their associated targets.	Calibre Site Construction Manager	Construction	
6.17.3	GHG records to be recorded and provided monthly the RTIOEP SEA as per the RTIO environmental monthly report template. Both NGERS and Non NGERS data is required.	Calibre Site Construction Manager	Construction	Quarterly Environmental Report Template (RTIO-HSE-0015107)
6.17.4	Energy efficiency to be included as part of environmental design review to ensure energy efficient design and identify improvement opportunities.	Calibre Engineers	Pre-Construction	Design Reviews

6.18 Concrete Batching

Concrete production produces highly alkaline wash-out water and aggregate with pH values exceeding pH 12 which can have significant environmental and human health effects if not managed appropriately.

As concrete production uses substances that if introduced to the environment at levels above background concentrations presents, or has the potential to present, a risk to harm to human health, the environment or any environmental value, the operation of a concrete batching facility falls under the *Contaminated Sites Act 2003*, the Contaminated Sites Bill 2000 (CS Bill) and Environmental Protection (Controlled Waste) Regulations 2004. As a result, concrete batching plants are heavily regulated in Western Australia and familiarity with the *Environmental Protection Act 1986*: Environmental Protection (Concrete Batching and Cement Product Manufacturing) Regulations 1998 is essential. All batching plants now require a licence per tenure which is the responsibility of the contractor to organise in liaison with RTIOEP.

Objective:

- to control the run off, dust and other emissions associated with the operation of the concrete batch plant.

Table 6-18 Management Actions for Concrete Batching

NO.	ACTION	RESPONSIBILITY	TIMING	REFERENCE DOCUMENTS
6.18.1	All concrete batch plants must comply with the Environmental Protection (Concrete Batching and Cement Product Manufacturing) Regulations 1998. Licence is to be obtained per tenure.	Calibre Project Manager / Calibre Construction Manager	Tender / Pre-construction	Environmental Protection (Concrete Batching and Cement Product Manufacturing) Regulations 1998.
6.18.2	Concrete batching must be carried out in such a manner that dust escaping from the premises is minimised and controlled	Calibre Project Manager / Calibre Construction Manager	At all times	Environmental Protection (Concrete Batching and Cement Product Manufacturing) Regulations 1998. / CEMP Section – Dust Management
6.18.3	Any materials spilt during concrete batching shall be cleaned up immediately.	Calibre Project Manager / Calibre Construction Manager	As required	
6.18.4	All inside areas on the premises must be regularly cleaned to prevent accumulation of dust on any surface.	Calibre Construction Manager	As required	
6.18.5	Aggregate and sand must be stored in storage bins or bays designed to minimise airborne dust where practicable. Aggregate and sand stored in a bin or bay is not to exceed the height of the bin or bay (including any windshields fitted to it),	Calibre Construction Manager	At all times	Environmental Protection (Concrete Batching and Cement Product Manufacturing) Regulations 1998 / CEMP Section – Hazardous Waste
6.18.6	If cement is kept on premises, it must be stored in bags or in a cement storage silo. The storage silo must comply with sub-regulation 2, hence it must be fitted with an air cleaning system which complies with regulation 7 and a level indicator or a relief valve which complies with regulation 8.	Calibre Construction Manager	Construction	Environmental Protection (Concrete Batching and Cement Product Manufacturing) Regulations 1998.
6.18.7	Waste water draining from the site area where agitators, mixers or moulds are loaded, where concrete is batched and water used for washing agitators mixers, moulds or cleaning split materials, or that is likely to be contaminated in any way, must be collected in a slurry pit or settling pond.	Calibre Construction Manager	Construction	Environmental Protection (Concrete Batching and Cement Product Manufacturing) Regulations 1998
6.18.8	Any water removed from or which might overflow from, a slurry pit drains into a settling pond.	Calibre Construction Manager	At all times	Environmental Protection (Concrete Batching and Cement Product Manufacturing) Regulations 1998
6.18.9	Settled material in a slurry pit must not dry out (except for removal purposes) or be higher than 30 cm	Calibre Construction Manager	At all times	Environmental Protection (Concrete Batching and Cement

NO.	ACTION	RESPONSIBILITY	TIMING	REFERENCE DOCUMENTS
	below top of slurry pit. Settling ponds must be sized for appropriate waste water retention times. All waste water treatment equipment must be maintained, emptied or cleaned as often as necessary to ensure efficient operation.			Product Manufacturing) Regulations 1998.
6.18.10	No water used in concrete batching or cement product manufacturing is discharged from the premises until Environmental approval for discharge to the environment has been obtained and it has been: - through a silt trap; or - contained in a settling pond for long enough to allow particulates to settle out; and - through an oil interceptor if the water is likely to contain hydrocarbons.	Calibre Construction Manager	At all times	Environmental Protection (Concrete Batching and Cement Product Manufacturing) Regulations 1998
6.18.11	Waste generated during concrete batching (including material removed from slurry pits, settling ponds, silt traps and oil interceptors must be recycled or disposed of at an appropriately licensed landfill or waste facility.	Calibre Construction Manager	At all times	Environmental Protection (Concrete Batching and Cement Product Manufacturing) Regulations 1998
6.18.12	Vehicles carrying concrete or any of its ingredients must not leave the premises until it has been washed free of cement slurry and dust.	Calibre Construction Manager / All Project personnel	At all times	Environmental Protection (Concrete Batching and Cement Product Manufacturing) Regulations 1998.
6.18.13	Audit and inspection of the concrete batching facility will be conducted by the Engineer as required to ensure that it complies with Environmental Protection Regulations and Company Standards.	Calibre Construction Manager / Calibre Environmental Advisor	As required	Calibre Form 125 – Concrete Batching Plant Audit

6.19 Abrasive Blasting Management

Abrasive blasting is a method of cleaning infrastructure (e.g. culverts) from debris or corrosion. This involves the use of a particulate (metal or mineral), propelled in a gaseous or liquid medium. This required consideration on the impact upon air quality, waste, noise and water-quality and the resultant environmental management measures to be employed.

Objective:

- Maintain effective abrasive blasting management to ensure that no unacceptable environmental impact occurs, with particular regard to control of particulates in air, soil and water.

Table 6-19 Management Actions for Abrasive Blasting

NO.	ACTION	RESPONSIBILITY	TIMING	REFERENCE DOCUMENTS
6.19.1	Abrasive blasting is not to occur within Environmentally Sensitive areas (Threatened Ecological Communities, Water Catchment Areas, National Parks)	Calibre Project Manager / Calibre Construction Manager	Tender / Pre-construction	Environmental Protection (Concrete Batching and Cement Product Manufacturing) Regulations 1998.
6.19.2	Noise Regulations are to be adhered to at all times.	Calibre Project Manager / Calibre Construction Manager	At all times	Environmental Protection (Noise) Regulations 1997
6.19.3	Pollutants generated by abrasive blasting should be prevented from entering water bodies (including groundwater) through direct discharge, seepage or through contamination of stormwater. Pollutants may include suspended solids, grease, lubricants, solvents, nutrients and oils.	Calibre Project Manager / Calibre Construction Manager	At all times	
6.19.4	All used abrasive and waste products generated during abrasive blasting (i.e. surface coating, spent media, filter cartridges, personal protective clothing) must be contained adequately within the working area and securely stored before disposal to a licensed waste depot. Abrasive waste that contains toxic heavy metals (e.g. lead) must be disposed of at a licensed hazardous waste facility approved to take heavy metals. Silica-free abrasives must be used.	Calibre Project Manager / Calibre Construction Manager	As required	RTIO-HSE-0014175 Controlled Waste Regulations Pilbara Iron Summary. RTIO-HSE-0010849 IEMS Waste Management Procedure

6.20 Demobilisation, Rehabilitation and Handover

Rehabilitation enables construction sites to be restored as close to their previous condition as possible. Rehabilitation of all non permanent areas is required including borrow pits, temporary access roads and laydown areas. Post-construction environmental management of the areas associated with the Project will be required to establish and record the success of the CEMP measures and capture any lessons for improvement of future management.

Objectives:

- To rehabilitate all non-permanent disturbed areas to a standard that achieves a safe, stable landform which supports self-sustaining native vegetation, is free draining and non polluting and visually compatible with the surrounding landscape;
- Successful re-establishment of rehabilitated areas;
- Demobilise from the site in an environmentally responsible manner;

- Ensure records and knowledge necessary for the management of environmental risk in the operations phase are handed over;
- Assess performance for continual improvement purposes; and
- Compliance with Handover procedure and number of items requiring ongoing management at demobilisation.

Table 6-20 Management Actions for Demobilisation, Rehabilitation and Handover

NO.	ACTION	RESPONSIBILITY	TIMING	REFERENCE DOCUMENTS
6.20.1	Calibre shall develop, document and maintain a demobilisation management strategy. The strategy shall be approved by RTIOEP at least 12 weeks prior to demobilisation.	Calibre Site Construction Manager	Construction	
6.20.2	Loose debris, litter and other non-hazardous materials will be collected, recycled where possible/practicable, removed and disposed of to landfill.	Calibre Site Construction Manager	Construction	
6.20.3	Where practicable, materials shall be made available for recycling and/or reuse.	Calibre Site Construction Manager	Construction	
Rehabilitation of Temporary Infrastructure Areas				
6.20.5	Unless otherwise specified, any temporary facilities shall be removed prior to demobilisation. All structures not handed over will be dismantled down to footing level and removed.	Calibre Site Construction Manager	Construction	
6.20.6	Above ground services shall be disconnected, removed and appropriately recycled or disposed of.	Calibre Site Construction Manager	Construction	
6.20.7	All redundant piping and cabling that is buried less than 1 metre below ground level will be removed and appropriately recycled or disposed. Redundant piping and cabling that is buried 1m or more below ground level can be left in situ if disconnected.	Calibre Site Construction Manager	Construction	
6.20.8	Disposal of waste concrete shall not proceed without consultation with the site environmental representative and RTIO environmental advisor, or without the following information: •Amount of waste concrete placed by Operations so far in the current year. •Additional volume expected to be disposed of as part of demobilisation. •Disposal location. •Method(s) of disposal.	Calibre Site Construction Manager	Construction	Concrete volumes are recorded for compliance purposes. Up to 500 tonnes of inert material can be placed without registration.
6.20.9	For disposal of waste concrete and inert material (i.e. bitumen roads) a hierarchy of disposal shall be adopted: 1. Re-use on site (i.e. for road base, engineering fill or similar).	Calibre Site Construction Manager	Construction	

NO.	ACTION	RESPONSIBILITY	TIMING	REFERENCE DOCUMENTS
	2. Re-use off site where suitable options exist nearby. 3. Disposal on-site within suitable areas such as borrow pits and landfill.			
6.20.10	Footings less than 5m² or less than 2m below ground level will be removed and appropriately disposed of. Other footings may be left in place, cracked and covered by at least 1m of clean fill to achieve a natural ground level.	Calibre Site Construction Manager	Construction	
6.20.11	Drainage structures (e.g. Pipelines, culverts etc) will be removed and salvaged for reuse or if not possible, appropriately disposed, and natural drainage re-instated.	Calibre Site Construction Manager	Construction	
Hazardous materials				
6.20.12	Hazardous materials will be drained and/or removed from all storage vessels, fixed plant, sumps and septic tanks, and removed from site for appropriate treatment through an appropriately licensed contractor prior to demobilisation.	Calibre Site Construction Manager	Construction	
6.20.13	HDPE or similar lining to be removed from secondary containment bunds and disposed of.	Calibre Site Construction Manager	Construction	
6.20.14	All exposed faces containing fibrous materials must be sealed and grid coordinates included in the handover package.	Calibre Site Construction Manager	Construction	
6.20.15	All mineral waste stockpiles containing fibrous material must be: •Capped with at least 1m of clean material. •Covered with topsoil if available. •Signposted. •Documented with the grid coordinates included in the handover package.	Calibre Site Construction Manager	Construction	
Removal of Contaminated Soil				
6.20.16	Contaminated Sites Register to be developed for the project.	Calibre Site Construction Manager	Construction	
6.20.17	All hydrocarbon-impacted soil shall be removed and taken off site. If available, and agreed, this may be deposited at the sites bioremediation area or approved alternative.	Calibre Site Construction Manager	Construction	
6.20.18	Validation soil testing must be undertaken in areas identified in the contaminated sites register or where large or repeated spills have occurred, to verify all hydrocarbon impacted material has been removed.	Calibre Site Construction Manager	Construction	
Environmental Management Records				
6.20.19	A handover meeting with environmental personnel will occur in accordance with the	Calibre Site Construction	Construction	RTIO-HSE-0016368 Environmental

NO.	ACTION	RESPONSIBILITY	TIMING	REFERENCE DOCUMENTS
	environmental handover procedure. The procedure outlines all the necessary records that must be provided as part of the handover.	Manager		Handover Procedure RTIO-HSE-0016367 Environmental Handover Checklist
6.20.20	Measures will be undertaken to ensure successful rehabilitation of all areas disturbed for construction that are not handed over to Operations.	Calibre Site Construction Manager	Construction	
6.20.21	Rehabilitation re-shaping as a minimum shall ensure: • Natural drainage is re-instated. • The final profile of a constructed drainage line should consist of a flat base and sloped banks. Depth should not exceed 0.5m. • Rock armouring shall be used where necessary to prevent erosion. • Windrows should be constructed on the contour every 50m on sloped areas to prevent large sheet water flows. • Areas that are very compacted shall be ripped twice to a depth of 0.5m metres along the contour. A three-tyne attachment has been found to be most effective for this purpose. • Drilling sumps are to be backfilled with suitable material.	Calibre Site Construction Manager	Construction	
6.20.22	For roads and other access tracks, if a treatment such as a salt or acid base dust suppressant has been used then clean fill may be required over the surface so that plant germination is not suppressed.	Calibre Site Construction Manager	Construction	
6.20.23	Roads should be ripped along the contours to minimise erosion potential. Respread Topsoil windrows (according to IEMS procedure – Soil Management) and stockpiled vegetation onto the roads. Then the surface shall be ripped to mix the topsoil and vegetation.	Calibre Site Construction Manager	Construction	RTIO-HSE-0011596Soil Resource Management
6.20.24	Borrow pits must be closed in accordance with IEMS procedure – Borrow Pit Specification and Management and any additional DEC requirements.	Calibre Site Construction Manager	Construction	RTIO-HSE-0015216 Borrow Pit Specification and Management
6.20.25	Rehabilitation shall be progressive wherever possible and where appropriate, rehabilitated areas shall be demarcated to prevent inadvertent or unauthorised access and appropriate signs placed.	Calibre Site Construction Manager	Construction	
6.20.26	Rehabilitation areas shall be surveyed and mapped for future monitoring purposes and provided to EP for inclusion in the handover package. Records detailing the rehabilitation methodology will be kept and handed over to operations	Calibre Site Construction Manager	Construction	

NO.	ACTION	RESPONSIBILITY	TIMING	REFERENCE DOCUMENTS
6.20.27	Rehabilitated areas will be inspected and approved as satisfactory prior to the demobilisation of the contractor.	Calibre Environmental Advisor / RTIOEP Specialist Environmental Advisor	Construction	
Environmentally Sensitive areas				
6.20.28	All sensitive areas (i.e. heritage sites and environmental exclusion zones), to be protected, signposted and barricading fencing maintained. Ensure all possible weed locations are recorded and weed outbreaks to be controlled.	Calibre Site Construction Manager	Construction	See Section 5.5 Weed Management

6.21 Fibrous Materials Management

Geological formations underlying the proposed rail infrastructure corridor have the potential to contain fibrous minerals. Asbestos is a term applied to a group of fibrous (asbestiform) silicate minerals belonging to the serpentine and amphibole mineral groups. Rarely these intersected minerals are asbestiform, and if present usually occur in veins or small veinlets with the occurrences generally being small and isolated and therefore often not noticed. Where asbestiform minerals are encountered, airborne asbestos fibres may appear as a minor/ trace contaminant in the dust produced during blasting, crushing and subsequent handling. Disturbance of fibrous materials such as asbestiform has been associated with serious health effects and has the potential to cause harm to the environment if allowed to enter water courses or if particles become airborne.

Objectives:

- Prevent exposure to staff and contractors from harmful levels of naturally occurring fibrous minerals in the workplace using appropriate controls; and
- Prevent contamination to the environment from fibrous minerals.

Table 6-21 Management Actions for Fibrous Materials

NO.	ACTION	RESPONSIBILITY	TIMING	REFERENCE DOCUMENTS
6.21.1	Where there is a risk that asbestiform or fibrous materials may be encountered in material excavated from site, for fill or for the placement of infrastructure, the material will be assessed (and documented) for the likelihood of exposing fibrous materials in accordance with RTIO Fibrous Materials Management Plan – (RTIO-PDE-0062061).	Calibre Site Construction Manager	Construction	CP-PLN-K-001 Dust Management Plan and RTIO-PDE-0062061 Fibrous Materials Management Plan.
6.21.2	Management controls should include; implementing drilling methods (i.e. wet drilling) and blasting techniques which minimise dust generation and be in accordance with RTIO Fibrous Materials Management Plan – (RTIO-PDE-0062061).	Calibre Site Construction Manager	Construction	RTIO-PDE-0062061 Fibrous Materials Management Plan. And Section 6.14. Hazardous materials management
6.21.3	Material containing asbestos must be labelled with “caution asbestos” in letters not less than 50mm high (where practicable).	Calibre Site Construction Manager	Construction	Refer to Section 6.14. Hazardous materials management
6.21.4	Wastes contaminated with fibrous materials or asbestiform should be disposed of in accordance with the Environmental Protection (controlled waste) Regulations 2004.	Calibre Site Construction Manager	Construction	Refer to Section 6.12 Waste Management and Section 6.14 Hazardous Materials management .
6.21.5	Any fibrous materials exposed during construction will be managed as per section 6.20 Demobilisation, Rehabilitation and Handover.	Calibre Site Construction Manager	Construction	Refer to Section 6.20.12, 6.20.13, 6.20.14, 6.20.15.

6.22 Management within Class ‘A’ Reserve

The Project intersects the class “A” Reserve; Millstream Chichester National Park. The MCNP contains significant conservation, recreation and heritage values. Construction sites within the MCNP will require additional management to mitigate the potential risks posed by the Project.

Objective:

- Mitigate environmental impacts within MCNP.

Table 6-22 Management Actions for works within class 'A' Reserve

NO.	ACTION	RESPONSIBILITY	TIMING	REFERENCE DOCUMENTS
Weed Management				
6.22.1	Weeds and hygiene at sites within the MCNP will be managed in accordance with Section 6.5 Weed Management.	Calibre Site Construction Manager	Construction	Section 6.5 Weed Management
6.22.3	Strict weed hygiene controls will be introduced for all ground engaging equipment working within or immediately adjacent to the national park. Ground engaging vehicles will be required to; 1) Present weed hygiene certificates prior to mobilisation. 2) Wash down prior to demobilisation weed infested areas within the MCNP. 3) Sumps used for the wash down of equipment will be will be covered with clean fill material to reduce the likelihood of weeds originating within sumps Sumps will be designed to prevent run off.	Calibre Site Construction Manager	Construction	
6.22.4	Bunting and signage will demarcate topsoil stockpiles that are found to contain weeds within the MCNP to prevent LV's from entering the area and potentially spreading weed propagules.	Calibre Site Construction Manager	Construction	
6.22.5	For project work areas; where topsoil that originates within the MCNP is infested with weeds, it will be respread in the location it originated and controlled through inclusion in future spraying programs.	Calibre Site Construction Manager	Construction	
6.22.6	Targeted weed control programs that involve the spraying of serious environmental weeds at construction sites or where ground disturbance activities are occurring within the Project area will be developed in consultation with DEC. At the end of construction, targeted weed control programs will be handed over to rail operations with a commitment to continue consultation with the DEC To manage weeds.	Calibre Site Construction Manager	Construction	
Fire Management				
6.22.7	Fire fighting equipment shall be made available in all vehicles and at designated work area points (such as fast attack units during hot works).	Calibre Construction Manager	Construction	
6.22.8	Fire breaks shall be established around key facilities and be maintained on a regular basis in consultation with DEC.	Calibre Construction Manager	Construction	
6.22.9	Communication protocols will be developed in consultation with the DEC with respect to fire management in the MCNP.	Calibre Occupational, Health and Safety Manager	Pre Construction	
Ground Disturbance and Clearing				

NO.	ACTION	RESPONSIBILITY	TIMING	REFERENCE DOCUMENTS
6.22.10	Ground Clearing and disturbance will be managed in accordance with Section 6.2 Ground Disturbance and Clearing.	Calibre Construction Manager	Construction	Refer to Section 6.2 Ground Disturbance and Clearing.
6.22.11	Engineering designs for construction, laydown areas were reviewed by the engineering team with the aim of reducing the Project's disturbance footprint. This review involved investigating the potential to use existing cleared/disturbed areas and where this was not practicable reviewing the design footprint to minimise land clearing and disturbance.	Calibre Engineers	Pre Construction	
6.22.12	Where possible the use of borrow material will be avoided through balancing the cut to fill ratio for construction of the rail foundation and embankments. Where there is insufficient cut to meet the fill requirements, imported materials will be required..	Calibre Engineers	Pre Construction	Criteria matrix for borrow pit selection to be developed.
Rehabilitation				
6.22.13	Rehabilitation of disturbed areas will be done as soon as practicable to facilitate fauna habitat restoration.	Calibre Construction Manager	Post Construction	
Community Relations				
6.22.14	A complaints register will be developed which shall record complaints received from the community, MCNP Rangers and other members of the public.	Calibre Site Environmental Officer	Construction	

6.23 Workforce Management and Public Access within MCNP

The Project construction sites and associated facilities are located on Miscellaneous Mining Act leases and Land Administration Leases that are bound by the MCNP. The location presents a number of potential threats to aspects of the National Park management. Construction worker use of the park may result in unwanted impacts to the environment and community, with associated impacts to RTIO reputation. Appendix A contains a document RCE Project Workforce – Millstream Chichester National Park Impacts and Management, that addresses the impacts and associated management measures to mitigate these impacts in more detail.

Objectives:

- To minimise impacts on the Millstream Chichester National Park and to park users resulting from RTIO employees and contractors use of the area; and
- To ensure sustainable use of park facilities; including visitor centre, recreation areas, scenic areas, picnic areas, rest areas and toilets.

Table 6-23 Management Actions for Construction Actions for construction workforce management within the national park.

NO.	ACTION	RESPONSIBILITY	TIMING	REFERENCE DOCUMENTS
6.23.1	The site induction shall include rules regarding MCNP, including access, fire, weeds, rubbish, noise, alcohol and travelling	Calibre Site Environmental Officer	Induction	
6.23.2	All site visits within MCNP will be in accordance with the Appendix A: RCE project workforce – Millstream Chichester National Park Impacts and Management	Calibre Site Construction Manager	Construction	Appendix A: RCE project workforce – Millstream Chichester National Park Impacts and Management
6.23.3	The MCNP and Mungaroona Range Nature Reserve Draft Management Plan published by the DEC shall be made available to RCE construction personnel employed on the job.	Calibre Site Environmental Officer	Construction	DEC 2007. Millstream-Chichester National Park and Mungaroona Range Nature Reserve Draft Management Plan.
6.23.4	Any complaints or incidents involving RTIOEP employees and contractors in MCNP shall be recorded in a Complaints Register, and shall be reported via the RTIOEP incident reporting process, and as soon as possible thereafter to the DEC, to determine suitable corrective actions and measures to avoid the recurrence of similar events	Calibre Site Environmental Officer	Construction	RTIO-HSE-0081938 RTIOEP Procedure Health, Safety and Environmental Incident Management Procedure
6.23.5	Any damage or unauthorised access to the MCNP, including off –road vehicle use, shall be reported as per incident reporting procedures	Calibre Site Construction Officer	Construction	RTIO-HSE-0081938 RTIOEP Procedure Health, Safety and Environmental Incident Management Procedure
6.23.6	Where existing National Parks roads or fences area intersected by construction	Calibre Site Construction	Construction	

NO.	ACTION	RESPONSIBILITY	TIMING	REFERENCE DOCUMENTS
	activities, suitable warnings, and crossings (by-passes) shall be constructed and maintained.	Manager		
6.23.7	Any fences and tracks affected by construction work shall be restored on completion of construction, as directed by RTIO EP and as agreed with DEC	Calibre Site Construction Manager	Construction	
6.23.8	Regular consultation shall take place between the RTIOEP project personnel and DEC Park Management. This shall include updates regarding construction timing and progress, particularly if works interfere with MCNP activities/ and or public access.	RTIO EP	Construction	
6.23.9	Corrective actions arising from incidents or public complaints shall be entered into the corrective actions register and monitored and verified before being closed out.	Calibre Site Environmental Officer	Construction	RTIO-HSE-0081938 RTIOEP Procedure Health, Safety and Environmental Incident Management Procedure
6.23.10	The number of complaints and corrective actions shall be entered in the Monthly Environmental Reports, as per the reporting procedures.	Calibre Site Construction Manager	Construction	RTIO-HSE-0015107 Monthly Environmental Report

7.0 FORMS AND PROCEDURES REFERENCED IN CEMP

Calibre Documents	
RCE-PLN-T-003	Construction Environmental Risk Register
RCE-PLN-T-004	Objectives and Targets
RCE-PLN-T-005	Training Needs Analyses
RCE-PLN-T-006	Environmental Audit Schedule
RCE-REP-T-001	Legal and Other Requirements Register
RCE-PLN-K-001	Safety Management Plan
CP-PLN-K-001	Dust Management Plan
Calibre Form 001	Audit Checklist
Calibre Form 012	Environmental Checklist
Calibre Form 025	System Improvement/Non-Conformance Note
Calibre Form 038	Application to bring Hazardous Material to Site
Calibre Form 039	Hazardous Material Register
Calibre Form 044	Application to Bring Vehicles/Equipment onto site
Calibre Form 092	Formal Inspection Report
Calibre Form 106	Daily HSE Checklist
Calibre Form 125	Concrete Batch Plant Audit
Calibre Form 127	Request to Disturb Ground/Clear Vegetation
Calibre Form 128	Contractor Env. Demobilisation Requirements
Calibre Form 135	Mobilisation / Demob. Weed Hygiene Certificate
Calibre Form 162	Internal Environmental Assessment Report
Calibre Form 163	Weekly Environmental Inspection Checklist
Calibre Form 188	Clearing Permit - Take 5
Calibre Form 198	Borrow Pit Management Plan
Calibre Form 199	Bore Readings Record Sheet
To be developed	Project Aboriginal Heritage Mngmt Procedure
RTIO Documents	
	RTIO Incident Report Form
RTIO-HSE- 0043075	Clearing Permit Procedure
RTIO-HSE-0043306	Clearing Permit
RTIO-CR-001029	Approvals Coordination Emergency Procedure
RTIO-HSE-0070927	RTIO Heath, Safety, Env. and Quality Policy
RTIO-HSE-0010204	Pilbara Iron and Robe River JV + EP Env. Policy
RTIO-HSE-0010849	Waste Management Procedure
RTIO-HSE-0010867	Spill Response Procedure

Calibre Documents	
RTIO-HSE-0013116	Wildlife Interaction Policy
RTIO-HSE-0014175	Landfill Management Plan
RTIO-HSE-0015107	Environmental Monthly Report
RTIO-HSE-0015142	Soil Management Procedure
RTIO-HSE-0015216	Borrow Pit Specification and Management
RTIO-HSE-0016668	Environmental Monitoring and Measurement
RTIO-HSE-0018422	WWTP Standard Specification
RTIO-HSE-0018427	WWTP Operations and Maintenance Guide
RTIO-HSE-0019412	Contaminated Sites Register
RTIO-HSE-0019315	WWTP – Discharge Sampling and Monitoring
RTIO-HSE-0016368	Environmental Handover Procedure
RTIO-HSE-0016367	Environmental Handover Checklist
RTIO-HSE-0015143	Construction Env. Risk Assessment Procedure
RTIO-HSE-0037074	HSE Incident Report Form
RTIO-HSE-0010231	Environmental Communication
RTIO-HSE-0037074	Health, Safety & Env. Incident Report Form
RTIO-PDE-0062061	Fibrous Materials Management Plan.
RTIO-HSE-0040347	Mineral Waste Management Plan
DC-N001 (RTIO-EP-0361086)	Design Criteria Permanent Facilities
DC-N002 (RTIO-HSE-0040672)	Design Criteria Temporary Facilities

7.1 Other References

- Aquaterra, 2008. Pre Feasibility Study – 320MT Expansion Project Rail Upgrade Water Supply;
- Biota, 2008a, A Vegetation and Flora Survey of the Rio Tinto Rail Duplication Project – Cape Lambert to Emu Siding. Prepared for Rio Tinto, Biota, Leederville, September 2008; and
- Rio Tinto 2008, Environment Performance Standard - E4 Greenhouse Gas Emissions, Rio Tinto Pty Ltd, London, England.

APPENDIX A
RCE PROJECT WORKFORCE – MILLSTREAM NATIONAL PARK IMPACTS AND MANAGEMENT

RCE PROJECT WORKFORCE – MILLSTREAM NATIONAL PARK IMPACTS AND MANAGEMENT

The proximity of the Rail Capacity Enhancement (RCE) construction sites to the Millstream Chichester National Park has the potential to have an impact to aspects of the National Park Management. The DEC is concerned that construction worker use of the park may result in unwanted impacts to the environment and community with associated impact to RITO's reputation.

Previous construction projects in the Pilbara have recorded offsite environmental, community impact and nuisance events from the actions of workers outside of project areas. In light of this history, and due to the location of construction sites within MCNP, the Department of Environment and Conservation (DEC) have identified potential issues regarding the impacts of construction workers' behaviour and actions within the park.

Potential impacts from construction workers utilising the National Park or from inappropriate behaviour within the part are identified below and potential mitigation strategies identified.

Potential Impacts

Use of National Park Facilities

The presence of the workforce population within the National Park may increase usage of existing park infrastructure including: parking facilities, recreation areas, visitor centre, scenic areas, picnic areas, rest areas and toilet facilities.

This increase in visitor numbers may place extra pressure on National Park facilities, personnel and management. In turn, this may contribute to impacts such as accelerated wear and tear on facilities, reduced visitor enjoyment of the park and increased park management costs.

Biodiversity Impacts

Vehicles entering the national Park may increase the risk of introduction and spread of weed species and increase dust impacts from roads. Additionally, impacts to vegetation, flora and heritage sites may result if vehicles venturing off existing roads and tracks within the Park. Inappropriate disposal of waste, including inappropriate toileting has the potential to impact on the amenity of the Park.

Increase in Bushfire Frequency

Visitors may increase bushfire frequency within the park through incorrect use of cooking facilities, incorrect disposal of some items (e.g. glass bottles), disposal of cigarette butts to the ground and vehicle travel across grass or other vegetation areas. Increase in bushfire frequency has the potential to change species composition and density within the Park and increases the demand on DEC staff in the Park.

Disorderly, Inappropriate and Nuisance Behaviour

Construction workers utilising the National Park may interact with the members of the public, DEC staff and police officers from time to time. Potential areas of concern from worker behaviour include; drunken behaviour within the Park; disregard for Park rules and requirements; disregard for the direction of park staff, DEC officers or police officers; general disorderly or nuisance behaviour; and abusive or violent actions to others or within groups of workers.

Inappropriate behaviour of this nature has significant potential to damage Calibre and RTIO's reputation within the local community and with local and stage authorities.

Disposal of Rubbish

Park visitors, including project workers, are likely to generate rubbish during the course of a visit. Incorrect disposal of rubbish may create environmental impacts through attraction of pests / vermin, injury to native fauna, increase in fire risk and the introduction of non-biodegradable materials into the environment. Additionally, incorrect rubbish disposal may create visual and amenity impacts affecting other park users.

Increased Emergency Events

Workers travelling through the park may be involved in accidents or emergencies. Public emergency response within the Park is the responsibility of the DEC and local SES and may be limited, slow or non-existent depending on staffing levels. The location of the park and potential lack of services may put Project staff at risk in the event of emergencies or accidents. Additionally, increased visitor numbers may stretch already limited public emergency response capabilities.

Regular inspections will be conducted on light vehicles through daily pre-start checks, which include an assessment of vehicle cleanliness. Excessively muddy vehicles will be cleaned prior to leaving site.

Rubbish Management

Vehicles travelling to the National Park will be provided with plastic bags to allow for rubbish to be collected and disposed of outside the National Park.. Littering and correct waste management in the National Park will be covered in the Site Induction.

Liaison

Engagement with National Park staff, local and state government agencies and local police may improve the effectiveness of the management measures given above. Regular interaction between project supervisory and environmental staff with local and state bodies, in the form of a regular meeting or phone hook-up will allow for early identification of trends or problems and allow for the identification of areas for improvement.

Contact Details

The RCE Project is being managed by Calibre on behalf of Rio Tinto Iron Ore.

Any issues or comments regarding the RCE Project and MCNP should be directed to the Project Manager, David Blainey on 9205 2842 or 0407 390 080.

Mitigation Strategies

Assess Risks

Potential risks associated with construction workers use of the Millstream- Chichester National Park will be incorporated into overall project risk assessments and into specialist environmental and safety risk assessments, including the project Construction Environmental Risk Register (CERR.) Appropriate actions, including the actions described in this document, will be included in

the risk registers, accountabilities assigned and actions tracked. The project Construction Environmental Plan will also describe the required actions for use of the National Park.

Education and Information

Information on requirements for use of the National Park, expectations regarding behaviour and the penalties associated with breaches of requirements will be included into the project induction.

Environmental and community awareness will be enhanced through the delivery of targeted toolbox topics to the workforce and through posters and information sheets displayed on HSE notice boards.

Organised Activities and Supervision

To reduce uncontrolled use of the National Park, organised activities will be scheduled with the presence of an appropriate Supervisor. These activities may include organised and controlled trips or tours to scenic and recreation locations within the Park on RDOs. The consumption of alcohol will not be permitted within the Park during scheduled outings..
Additionally, environmental and supervisory staff may conduct occasional inspections of popular areas within the Park to monitor usage.

Vehicles

Vehicles will not be permitted to leave the work site areas without permission from the EPCM. Travel plans, which may include details on; personnel, vehicles, destination and expected departure, arrival and return times and the use of sign-in/out boards will apply.

Travel plans will include a check for the provision of sufficient fuel, water and food for off-site travel.